TRANSACTIONS

OF THE

AGRICULTURAL AND HORTICULTURAL SOCIETY OF INDIA.

ART. I.—*Report of the Special Committee on the best means of improving the Cotton Culture throughout Hindustan.*

[Submitted on the 8th January, 1840.]

THE paper which first occupied the attention of the Meeting held on the abovementioned day was the report which had engaged the consideration of the Special Cotton Committee, relative to the mode of carrying into effect the wishes of the Supreme Government of India, with respect to the extension of the Cotton cultivation of the country on improved principles. The Hon'ble the President adverting to the great importance of the subject intimated, that as the report was a long one, and moreover could but be hastily judged of if then read, he thought the most desirable plan to be adopted, would be to have the document printed in order that it might obtain as extensive a circulation as possible, and an opportunity thus be afforded to the public to peruse it and offer any remarks through the Press that might be thought useful. This course was accordingly resolved on.—H. H. S.

REPORT.

Preamble.

Your Committee remark that it will be, no doubt, in the recollection of the Society, that their assistance and co-operation in furtherance of the views of the Home Authorities for the improvement of the Cotton cultivation within the presidency of Bengal, including the North Western Provinces, has been requested by Government; that the Society has been informed by Mr. Secretary Halliday in his letter, under date the 22nd October last, that several American workmen, expected to arrive in Calcutta in the month of December, 1839, would be placed under its direction and orders, should the Society undertake the charge; that in "reply" the Government were informed, that the Society accepted the proffered trust; and that the Cotton Committee, reinforced by several Members conversant with the subject under discussion, has been in consequence requested to prepare a report, and propose a plan for carrying into execution the contemplated project.

Your Committee having taken the subject matter referred to it into its most serious consideration, is of opinion, that it will be advisable to discuss the subject under the various heads which naturally suggest themselves.

1st. Station and Disposal of the American workmen.

The stations at which the workmen should be located, and the mode of disposing of them.

As only three American cultivators and four Machine workmen are intended by the Government to be assigned to the Bengal Presidency, it will be necessary to place at each selected station, one Cultivator and one Machine workman, leaving one Machine workman to be disposed of hereafter as circumstances may suggest. It would doubtless have been advisable for obvious reasons, had the number of workmen, which your Committee originally had been informed were to be assigned to this Presidency, been placed at the disposal of the Society, to have located the cultivators by pairs, to prevent the delays and inconveniences likely to ensue from sickness and other similar causes; but as the number is so much restricted, your Committee is of opinion they should be located at three sudder stations, in the neighbourhood of which the best Cotton is grown, and to abandon for the present any intention of trying experiments in those parts of the Presidency, where the least doubt as to success may be entertained.

Your Committee is of opinion, that the stations for the workmen should be in the North Western Provinces, and entirely on the right bank of the River Jumna, the Cotton cultivation in that part of the country being so far superior to the Dooab Cotton, that the latter is extensively imported into Bundlecund for the fraudulent purpose of being mixed up with the Banda and Jalown Cotton.

The stations selected by your Committee are 1, Agra; 2, Banda* in Bundlecund; 3, Jubbulpore in the Saugor and Nurbudda Territories.

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* Culpee and Jalown are also good situations within the province of Bundlecund.

Your Committee has not failed to take into consideration, in the selection of the Stations, the necessity of placing them in situations where facilities of transport abound. It is obvious that there can be no reasonable objection made to the extension of operations by the Society to these districts from which private speculators can with profit transport Cotton to Calcutta for sale, on the score of difficulty of access, or deficiency of transport, and other similar impediments; but the facilities of the selected stations, it is known to your Committee, much exceed any difficulties which may be expected to arise. For Agra and Bundlecund are situated close to the river Jumna; and from Jubbulpore to Mirzapore, on the banks of the Ganges, the great Cotton Mart of the North Western Provinces, a bridged and metalled road of 239 miles in length, equal to any in England, has been made by Government; and at all the stations, the means of transport, viz. the river, hackeries, camels, and bullocks; and on the river, boats of every description, abound.

2nd. Duties of the workmen and their assistants.

Your Committee is fully impressed with the conviction, that in order fully to carry out the wishes of the Government, and of the Home Authorities, an experiment for the improvement of Cotton should be undertaken on a grand scale. for which purpose, a quantity of land should be cultivated under the special superintendence of the Society and on the principle of Neez cultivation; and they should also take a considerable quantity of land to be cultivated according to the Ryottee system. The Neez cultivation should be situated close to the

Sudder Stations of the workmen, and should not exceed the number of acres each workman can personally superintend, both in the ploughing, in the sowing, in the weeding, and in the gathering of the Cotton crop. The quantity should not be less than 200 acres for each workman, and the soil should be *the average Cotton soil of the District*, and not the choice Garden grounds. The Ryottee cultivation may with advantage extend to a considerable distance from the stations, and the quantity of land should be the extent the workmen and their associates can with facility properly superintend. As the villagers refuse to let the whole of the land of their villages for any particular crop, and as some parts of the land are more favorably suited for Cotton Cultivation than others,—for instance, the land close to nullahs answers best in the Nerbudda valley,—the Ryottee cultivation will extend to a considerable distance from the Sudder Station. It therefore appears to your Committee requisite to assign to each workman—1st, an Associate conversant with the language and agricultural processes of the country; and 2nd, Zilladars selected from the best Cotton Cultivators, who will be placed each in charge of small districts, under the superintendence of the American workmen.

The duty of the associates should be to act as interpreters to the workmen, and to aid and assist them in every way they may be required. The difficulty of obtaining persons qualified for such duties in the North Western Provinces, your Committee acknowledge; but it would suggest that the local authorities of the districts in which the workmen will be located should be consulted, both as to the selection, the rate of pay, and other subsidiary arrangements, before any final decision be arrived at.

3rd. Cultivation of Cotton.

The Zilladars, who must be inhabitants of the Cotton Districts, should be selected by the workmen with the sanction of the Agent of the Society, and to them a salary of six Rupees or more per mensem should be assigned. A liberal salary has been suggested, in order that the best men may be procured, and to remunerate them for the sacrifices they will have to make in giving up prejudices, and in performing duties to which they are unaccustomed.

The Neez Cultivation should be kept up more as a pattern for the agriculturists, and as evidence of what may be done by care, attention, and skill; and for the purpose of acclimating and bringing into general notice foreign seeds; but the workmen should likewise be left at liberty to cultivate on their khas lands the indigenous Cotton of the country, with a view to its eventual improvement, and to ascertain to what extent it can be brought to the perfection necessary to cause it to compete with American Cotton.

The object of the Ryottee cultivation should be principally for the culture of the best indigenous cotton. The seed should be furnished by the Society, and should consist of the Country, id est *Dasee*, seed of the best description procurable, and free from all admixture with other grain. The land should, when procurable on such terms, be rented from the Zemindar, or the person to whom it has been let; and the rentee should engage to plough, and sow the land

and reap the crop, under the superintendence and according to the directions of the American workmen—they should, by their Cubooleuts, be bound, under a penalty, to prepare the land according to a prescribed system; not to sow, as they usually do, other grain with the Cotton; to weed the crops when required by the workmen; and to pick the Cotton, at such times, and in such a manner, as the workmen may direct.

Your Committee observe, that these measures and precautions will ensure the growth of the best native crops, and will enable the workmen to collect and transmit to the Society cotton cleaned by machinery well picked and free from dirt or leaves.

4th. Payment for the Culture.

The payment to Ryotts or Zemindars should be a certain sum per maund over and above the bazar rate, deducting the land rent: but in cases where the Society may rent land from the Zemindars, and have it cultivated by Ryotts, then the land should be let out to the Ryotts, if possible on the above conditions; and they should in a similar manner be remunerated for their labour. It will be obvious, that by this intermixture of Neez and Ryottee cultivation,—the former cultivated exclusively by the American workmen, and the latter by the Ryotts, subject to the superintendence of the Americans, we shall obtain the best description of Cotton both from foreign and Native Seeds, with no more expense, in the Ryottee cultivation than the cost of superintendence, and the premium over and above the market price of Cotton; we shall diffuse the superior knowledge and manner of proceeding of the American system; we shall educate a body of at least 80 or 100 intelligent Natives into the mysteries of the new and improved system of agriculture; and the Society will have at their service, in the course of a couple of years, a body of well-instructed agriculturists fit to form stations, to educate more pupils, and all to be obtained at a small price, comparatively speaking; for the superior nature of the Cotton produced under such advantageous circumstances will, we may calculate on with great certainty, nearly repay the expenses incurred by the experiment. It should, the Committee observes, always be borne in mind that the chief object of our ambition should be, rather to improve the produce of the country, and to stimulate the people to adopt our improvements, than to introduce seeds or new agricultural implements, which may or may not succeed; and that we can, comparatively speaking, do little good by Neez cultivation, except with the view abovementioned.

5th. Superintendence. The aid of the Commissioner of Revenue or of the Collectors of the Districts, or both, will be essentially necessary for the superintending, advising and guiding in a general way the workmen, who should be directed always to apply to them for advise and assistance when requisite; and your Committee is of opinion that the Huzoor Tehsil Peshkars of each District should be the officers selected by the local officers to choose the fields, make the previous arrangements, and bargains, for the land, and to pay the rent, and make the requisite advances; but the purchase money of the Cotton which will be sent to Calcutta to the

Society, the workmen should pay. Your Committee further desires to observe, that the Civil Servants of the Government in charge of Districts, although perfectly competent, and no doubt willing, to afford the Society all general aid and assistance, yet their proper avocations will in general prevent their undertaking any minute supervision, and it would therefore be advisable to appoint at each station a person of weight, influence, and general knowledge of the customs of the agricultural classes, as Agents to the Society. At Agra, it is understood Dr. Falconer's services will be available for this purpose: and at Jubbulpore, Mr. D. F. McLeod, Principal Assistant to the Commissioner, will willingly grant his valuable aid; but in Bundlecund, there is no information before it by which your Committee can be guided in its choice; but it entertains no doubt, but that a competent person willing to afford his assistance will be found either at Banda or Culpee. It has been suggested that the Omlah attached to the Opium Department of Bundlecund, who has lately been discharged, on the abandonment of the opium cultivation in that Province, may be available for the cotton experiment; and your Committee would recommend that this suggestion should be taken into consideration, and, if approved of and deemed expedient, be adopted.

The Cultivators and Associates should report progress periodically to the Society through the Agent, and should also furnish copies of their reports to the Commissioner of the Division, who should be requested to favor the Society with his own sentiments.

6th. Calculation of the expense of the experiments.

Your Committee observes, that in ignorance of the arrangements made by the Hon'ble Court of Directors with the American workmen, and from the nature of the proposed measures, it will not be possible to prepare an estimate of the expenditure which will be required to work out the scheme, except in regard to the Associates and the Zilladars, whose salaries will probably be as follows:

3	Associates, 300 Rupees each, ...	900
60	Zilladars at 6 Rupees each, ...	360
	Office expense, peons, &c. for each station 100, ...	300
	Co.'s Rs. per mensem, ...	1560

Finally, on this point your Committee is of opinion, that the labours of the Secretary to the Society will be much increased by the correspondence which the Agents and local officers will hold with the Society on the subject of this interesting experiment; and although they are not at present prepared to suggest any specific addition to his salary and to his office establishment, yet they consider it but just and proper to draw your attention to the subject, with a view to future consideration.

7th. Premium.

The Premia to be offered in accordance with the intentions of the Home Government will best be divided, the Committee thinks, into two scales of rewards, the first division or scale to be for the management of the cotton cultivation of the country, so as to raise it on an equality with the average price of the best Upland

Georgian Cotton realizable in the Liverpool market, for the time being; and for this purpose the Committee proposes the following terms:

1st Scale.

For the best parcel of Cotton, the growth of the Provinces appertaining to the Governments of Bengal and Agra, not less than 300 bales in quantity, each bale to weigh 300 lbs. avoirdupoise, and to be cleaned by machinery, which shall realize in the Liverpool market at the time of sale, the average price of the best lots of American Upland Georgian Cotton sold at the same time in the same market, the sum of 20,000 Company's Rupees, or £ 2000 sterling.

Conditions.

The cotton brought forward for competition must be grown at the risk of one individual, the place or places at which it is grown must be named, and it must be the produce of the province of Bengal, Behar, Orissa,* Assam, Benares, Oude, Rohilcund, Agra, Delhi, Bundlecund, Malwah, or Saugor and Nerbudda Territories, but of no two or more provinces conjointly.

2nd. The proprietor must furnish a certificate on honor, countersigned by the Commissioner of the province or other chief authority, that the cotton exhibited by him for competition for the reward is the property of himself solely, and has been obtained by him from a single province.

3rd. All cotton entered for competition shall be duly registered at the office of the Secretary, on or before the first day of October, 1843, at which time the Agricultural and Horticultural Society will enter on the examination of the bales, and the documents which have reference to them ; and should the Society deem the sample bale selected for examination to contain cotton likely to realize the object for which the prize is offered, that then the proprietor shall make over the whole quantity to the custody of the Society, and be furnished in return with a duly attested acknowledgment to that effect.

4th. That the cotton so made over shall be shipped at the port of Calcutta and be sent to the Manchester Chamber of Commerce, to be brought forward at as early a day as possible, with a request that that body undertake to ascertain the true value of the cotton by appraisement and subsequent sale.

5th. On the receipt of the account of sales being received by the Society, from the consignees, the sum realized for the cotton so sold, shall be duly compared with the official Price Currents of the day, the appraisement by two sworn brokers, and the Report of the Manchester Chamber of Commerce, and if the amount realized by the sale of the aforesaid cotton, be one that can be fairly considered to average the current price of the best Upland Georgian Cotton of America, then the prize shall be considered to have been justly won, and a certificate, signed conjointly by the President and Secretary of the Society to that effect, shall be furnished to authorize the payment of the reward out of the Government Treasury to the individual who earns it.

6th. The Cotton under transport to England to be hypothecated for the benefit of the Proprietor, and on the receipt of the account of sales, a statement to be duly made of the out-turn of the consignment, and a balance struck, which, whether the object in view be realized or not, shall be duly furnished to the competitor, and all monies appertaining to the transaction, be immediately made over to him, without any deduction whatever on the part of the Society of commission, or other money profits.

7th. The cotton shipped under these conditions, shall be insured in one of the Calcutta Offices, and the charge for the same be borne by the competitor.

8th. A Prize to the foregoing amount shall be offered annually for a period of three years, commencing from the 1st day of October, 1843.

9th. The Society reserves to itself the right of rejecting the claims of any competitor, without assigning a reason for so doing.

2ND SCALE—FIRST PRIZE.

For the best parcel of cotton the growth of the Provinces appertaining to the Government of Bengal or Agra, not less than 300 bales in quantity, each bale to weigh 300 lbs. avoirdupoise, to be cleaned by Houldsworth's Churka, or any other more approved machinery, which shall realize a price in the Calcutta market, very much superior to that of the ordinary indigenous cotton of the country sold at the same time.

The sum of 10,000 Co.'s Rs. or £1000 Sterling.

SECOND PRIZE.

For the second best parcel of cotton the growth of the Provinces appertaining to the Governments of Bengal or Agra, not less than 300 bales in quantity, each bale to weigh 300 lbs. avoirdupoise, to be cleaned by Houldsworth's Churka or any other more approved machinery, which shall realize a price in the Calcutta market very much superior to that of the ordinary indigenous cotton of the country sold at the same time.

The sum of 5,000 Co.'s Rs. or £500 Sterling.

Conditions.

The cotton brought forward for competition must be grown at the risk of one individual, the place or places at which it is grown must be named, and it must be the produce of a single Province of either the Bengal or Agra Presidencies, Oude included.

2nd. The proprietor must furnish a certificate on honor, countersigned by the Commissioner or other Chief appointed Officer of the Province, that the cotton offered for competition is the growth of that Province.

3rd. The cotton entered for competition under this scale, shall be duly made over to the Agricultural and Horticultural Society for examination, and eventually, if it thinks proper, public sale.

4th. Before the cotton so offered to the Society is disposed of, an appraisement by at least three well known cotton dealers and by the Cotton Committee of the Society shall be obtained, which appraisement shall contain a statement, whether the party or parties so appraising is, or are prepared to take the lot at the price mentioned in the valuation paper.

5th. On the Society being convinced that the cotton presented for competition is very superior to the ordinary indigenous cotton of the country, and can therefore realize a superior price, the same shall be sold by Public Auction at Calcutta, after which the produce shall be made over to the competitor, and a certificate, signed by the President and Secretary of the Society, announcing the reward, shall be furnished to him, which certificate shall be authority for the payment of the prize at the Government Treasury.

6th. The Society reserves to itself the right of rejecting the claims of any competitor, without assigning a reason.

7th. Prizes to the foregoing amounts shall be offered annually, for a period of three years, commencing from the 1st day of October, 1843.

(Signed) F. C. SMITH, *Chairman.*

Art. II.—*Despatch from the Home Government relative to the Cultivation of Hemp, and the publication of useful Papers bearing on the Improvement of the Commercial Resources of the Country.*

[Read at the meeting of the Society held on the 12th February, 1840.]

The first communication which was submitted to the Meeting on the above day, was the following letter with a despatch and its enclosure from the Government of India.

No 69.

To H. H. SPRY, Esquire,
Secretary to the Agricultural and Horticultural Society.

Genl. Dept.

Sir,—I am directed by His Excellency the President in Council to transmit to you for the information of the Society the accompanying copy of a letter No. 14 of 1839, from the

Hon'ble the Court of Directors, in the Public Department, dated the 24th July, and of its enclosure on the subject of the cultivation of Hemp in India.

I am, Sir,
Your obedient Servant,
H. T. PRINSEP,
Secy. to the Govt. of India.

Council Chamber, the 29th January, 1840.

PUBLIC DEPARTMENT.

No. 14 OF 1839.

Our Governor General of India in Council

Para. 1. We forward a number in the packet copy of a paper prepared by Dr. Royle on the advantages and practicability of cultivating Hemp in India, with a view to the supply of that article to meet the large demand constantly existing for it in this country. It is our wish that the suggestions which it contains should receive immediate attention, and especially those which relate to the experimental culture of Hemp in our Botanic garden at Saharunpore.

2. In conformity with the recommendation of Dr. Royle we shall at the earliest opportunity send out specimens of the different qualities of Hemp found in the markets of this country, with advices of the prices which they bear; and we desire that specimens may be furnished to us of Himalyan Hemp in different states as prepared by the people of the Hills, and also with specimens of hempen rope and sackcloth.

3. We propose from time to time to print and publish such information as may come before us calculated either to extend the knowledge of the productions of

India, to increase their amount, improve their quality, or give a stimulus to the demand for them, and we desire that you will cause similar measures to be taken for effecting the same objects throughout India.

We are, &c.
(Signed,) R. JENKINS.
„ W. B. BAYLEY.
„ W. STANLEY CLARKE.
„ JOHN G. RAVENSHAW.
„ HENRY WILLOCK.
„ JOHN SHEPHERD.
„ C. MILLS.
„ ROBERT CAMPBELL.
„ JOHN FORBES.
„ H. SHANK.
„ H. ALEXANDER.
„ J. D. ALEXANDER.
„ RUSSELL ELLICE.

London, 24th July, 1839.

The union of strength with flexibility being so essential for many mechanical purposes, various experiments have been made at different times and places to find substances fit for manufacturing into cordage. Skins and leather were first employed for this purpose in many countries, but vegetable fibre having been found very superior for most purposes, leather ropes became superseded, and attention was turned to the vegetable kingdom for the best cordage materials; and the Hemp Plant combining the required properties in the greatest degree has come to be almost exclusively employed for making the ropes and sails of vessels. It is cultivated therefore by many nations for Home use, and by others for export. To these therefore its culture is of great importance, and its commerce very considerable. In the year 1836, of 586,032 cwt. imported into the United Kingdom 556,458 cwt. were shipped at St. Petersburgh and Riga. The subject therefore is of vital importance to a nation which imports such large quantities of the raw material for the rigging of its vast Navy and Merchant shipping, as they might at any time by the occurrence of war be deprived of this supply.

This deprivation did in fact take place during the last war, and great inconvenience was sustained by British shipping, as the price of Hemp, which in 1792 was only £25 per ton, rose to £118 in 1808, and only 259,689 cwt. were imported in that year. The Colonies therefore and India were looked to for a supply of Hemp, and its cultivation encouraged in North America.

The cultivation of Hemp in India obtained very great attention from the Court of Directors, and instructions were sent to the Governments there to encourage the growth as well of that as of other Cordage plants. As the natives of India employ between 40 and 50 different kinds of plant for the fibre which they yield fitted for this purpose in different degrees, the subject of investigation was sufficiently extensive, and received great attention from Dr. Roxburgh. A few only, however of the Cordage plants of India are extensively cultivated in that country or known in commerce, as *Coir*, *Sun*, *Sunnee*, or brown Indian Hemp and Jute :—the first yielded by the husk of the *Cocoanut*, (Cocos Nucifera,) and the others by the plants known to botanists by the names of *Crotolaria Juncea,* Hibiscus Cannabinus, Corchorus Olitorius and Corchorus Capsularis. These being in general so inferior in strength to the true Hemp do not realize above one-third or one-half of the price of that imported from Russia, but for this very reason they continue to be imported for the purpose of making the inferior kinds of rope. There are several other plants yielding more valuable products suited to the climate of India, and which might easily be cultivated there, and therefore worthy of attention. Some of these I propose subsequently bringing under notice, as it is important to find plants yielding valuable products suited to the soil and climate of different parts of India, as they would occupy space often uncultivated as well as serve to fill up the time of the Agriculturalist labourers, at the same time that they afforded materials for both internal and external commerce.

On the present occasion I confine myself to the Hemp plant itself, (the Cannabis Sativa of Botanists) as being the most valuable of the whole, and because it is in general erroneously supposed that it can only be successfully cultivated in European regions, though there is every reason to believe that it is originally a native of Asia, and even that its Greek and Latin name *Cannabis* is derived from the Arabic *Kinnub.* It is well known to be common in Arabia and Persia, as well as in every part of China and of India, and likewise in Egypt and Turkey ; but in all these countries it is valued chiefly if not only for yielding an intoxicating drug commonly called *bhang.* In European countries it is on the contrary cultivated only on account of its ligneous fibre so extensively employed in the manufacture of the strongest ropes, and of coarse but strong kinds of cloth. The wide distribution of this plant throughout Europe and Asia is remarkable, but easily explained when we consider that it is an annual, which requires only a few months of summer temperature to bring it to full perfection. The requisites for its successful cultivation, it is however necessary to notice when endeavouring to introduce elsewhere its culture.

Hemp is cultivated in almost every part of Europe for Home consumption, but only in large quantities for export in Russia and Poland, though the finest quality of Hemp comes from Italy. French Hemp is also much esteemed, as well as that grown in both England and Ireland; but for the present purpose it is necessary only to notice the culture of the chief kinds which enter into commerce.

Hemp is cultivated in almost every province of Russia, but in the largest quantities in the interior beyond Moscow as well as nearer St. Petersburgh, and in the Polish provinces which belong to Russia. The soil must not be over-rich nor too sterile, of moderate depth and friable. The time of sowing varies from the middle of May to the end of June; by some it is recommended not to be sown until the latter end of June, as frosts are very injurious to its growth. The season of reaping is from the end of August to the end of September, the male plants being pulled some weeks before the female. The Russian summer though short is regular while it lasts, and the temperature sufficiently high to bring it to full perfection.

That the northern latitudes of Russia are not essential for the successful cultivation of Hemp, is however evident from the large quantities which are grown in the southern climate of Italy both at Bologna and Romagna, and along the banks of the Po as well as in the neighhourhood of Naples. The Italians have a saying, that "Hemp may be grown every where, but it cannot be produced fit for use either in heaven or earth without manure." The climate of Italy it is well known is remarkable for its clearness, regularity, dryness and warmth, and that irrigation is essentially necessary for much of its agriculture. The Italian Hemp is fine, soft, light-coloured, and strong as well as long in the staple, and it is important to remark that it brings the highest price in the English Market; as, for instance, it sells for 50 shillings a cwt. when the best Russia sells at 47 shillings for the same quantity.

If we compare the summer temperature of the northern with the southern situations, we shall not find so great a difference as we might be led to expect by considering only their latitudes or their mean annual temperature.

Thus Petersburgh and Moscow in North latitude 59° 56′ and 55° 46′ have summer temperature of 62° 6′ and 67° 10′ of thermometer, while Milan and Rome in North latitude 45° 28′ and 41° 53′ have summer temperature of 73° 4′ and 75° 20′.

The climate of the southern parts of Italy has some resemblance to that of the north of India, in as much as here is a mild winter with little frost and no snow, early spring and a hot dry clear summer, (the Indian climate is however much modified, indeed ameliorated, by the coming on of the rainy season;) yet we find, that with the aid of irrigation they are able in Italy to cultivate many of the same grains which are cultivated in India in the rainy season, as for instance Rice, Indian corn, Millet (Panicum Italicum), and Jour (Sorghum vulgare). Cotton is also cultivated, and Sugar-cane and the Banana in small quantities; Limes and Oranges and Citrons originally introduced from India are perfectly at home. The Date and Palmetto Palm are quite naturalized, together with the Oleander, Jujube and Pomegranate, with the Neem tree, American and common Aloes, and the Inudar, with some African and Asiatic Acacias.

Without entering into details it might be inferred as probable, that as Italy grows rice and many other plants of India, so might the latter cultivate a plant like the Hemp, which succeeds so well even so far south as Naples, and which requires only a few months to bring it to perfection, and this even if India did not already possess it.

But so far from this being the case the reverse is the fact, and it is well known that no plant is so commonly cultivated in many parts of India as the true Hemp plant which is there called *ganja*, but which differs in no respect from the European plant, though the natives employ it only for the purpose of yielding *bhang*. But cultivated for this purpose, instead of being sown thick as it ought to be, when intended for cordages, it is sown thin by the natives, who afterwards transplant the young plants and place them at distances of 9 or 10 feet from each other. The effect of this is to expose them more freely to light, heat and air, by the agency of which the plant is enabled to perfect its secretions in a more complete manner, and the *bhang* will consequently be of a more intoxicating nature. The fibres and woody parts at the same time attain a greater degree of stiffness and solidity, as is found to be the case with timber trees similarly exposed. The Hemp plant thus grown will branch much. It may be small in dry situations and large in wet and moist ones, but in either case its fibres are found both in Europe and India to be rough, stiffer and with more difficulty separated from the woody part than is desirable, but seed is produced in large quantity and of better quality. This mode of cultivation has, however, the disadvantage of being more expensive, from taking up more space than desirable when the plants are required to yield the best quality of fibre for cordage.

Plants, when grown in moist situations, in shade, or set thickly together, are well known to run into leaf, shoot up and to become more lax in texture, while their secretions are imperfectly formed, as is exemplified in the growing of lettuce, celery, &c. Hemp and Flax when cultivated for their fibres are sown thickly together, and they shoot up into long wand-like plants, which are much less branched than when freely exposed, air and light having less free admission, and heat having less influence in evaporating the sap: the effect is to produce a longer fibre, which is at the same time soft and pliable, as well as more easily separated, and in larger quantity on the same space, than when they are set widely apart.

The Natives of India also sow their *Sun* and Jute very thickly together, when for the sake of their fibres they form the exclusive crops. The effect is to produce a long and flexible fibre, though this is not sufficiently strong to form a good substitute for the true Hemp: but if this were cultivated in suitable situations in India in a manner similar to that adopted in Europe, or like that practised with its substitutes in India, the effect would undoubtedly be to produce a sufficiently long fibre, which would also be softer and more pliable at the same time that it retained a great portion of its original strength, and probably in as large a quantity as is yielded by the *Sun* plants, and thus an article might be produced which, judging from the Indian samples, might enter into competition with the Russian product, and at all events afford much more valuable cordage than the several inefficient substitutes now so extensively cultivated in India, and which imported into this country sell only for 15 to 20 shillings a cwt. at the same time the Russian, Polish and Italian Hemp are selling for 42 to 50 shillings a cwt.

The difference in price would appear a sufficient inducement to attempt the culture of the true Hemp in India, especially as there could be no doubt respecting its growth, as it is already so common in every part of that country, and requiring if any thing only a little modification of its properties which could be ensured most probably by a change in the mode of cultivation. Dr. Roxburgh, as long since as the year 1800, thought Rohilcund and the neighbouring hills suited to the cultivation of Hemp. I have seen it in great abundance in a wild state in the Deyra Doon and also in the Khadir land of the Saharunpore District, especially along the upper part of the Doab Canal, and where it was chiefly valued for its leaves being made into *bhang* and *subjee*. The stems when dried being burnt for firewood.

There would be little difficulty in cultivating this plant in the low Khadir land where it is wild, nor in converting it into merchantable Hemp. For the natives of the neighbourhood already make use of it, partially for the manufacture of ropes, and the inhabitants of Malabar are said by Dr. H. Scott to employ the Hemp for making their fishing nets.

The natives of the Himalayas likewise possess the plant, which, though they prepare an intoxicating drug from it called *churus*, they likewise value for its ligneous fibre, from which they prepare a coarse kind of cloth, which they send into the plains for making very durable *grain sacks*, as well as the strongest ropes (called *sel*), for crossing their rivers.

This fact, though not generally known, is mentioned by Kirkpatrick in his account of Nepaul, and was ascertained by General Hardwick in his visit to Srenuggur, as well as by myself, when travelling in the Himalayas. (Illustrn. p. 333.) I also obtained specimens of the rope and cloth when travelling there, but which I regret I am unable now to find. The plant I have seen in a very luxuriant state at least 10 or 12 feet high, in the Himalayas, at elevations of 6 and 7000 feet, especially in the neighbourhood of Buffalo sheds. In such situations and near villages it could no doubt be easily cultivated to a great extent, and would yield a valuable and profitable product.

The Hemp could likewise be cultivated in the plains at two seasons of the year; that is, during the rainy season, as is now the case, and likewise the cold weather, by cultivation similar to that of the summer culture of European countries. But experiments require to be made and specimens procured in order to determine, which season is most proper for the culture of this plant in order to yield Hemp of the best quality.

Hill people might no doubt easily be obtained for preparing the Hemp according to their own method, and teaching the people in the plains, who are already practised in the art of preparing *Sun*. It would, however, be desirable to procure, if practicable, the assistance of some European, (and such might be found among the soldiers,) who had seen and practised the preparation of Hemp in this country. The experiment might be made with little expense and probably great advantage (from the useful information which would be obtained for the use of cultivators) in the Botanic Garden at Saharunpore, if instructions were given to this effect to Dr. Falconer, Superintendent of that institution.

For due attention being paid to the details of this subject, it would be extremely desirable to send out to India specimens, with prices of the different qualities of Hemp found in the markets of this country, so that cultivators in India might know what they had to imitate and rival. It would also be extremely desirable, in order to ascertain the present quality of the Himalayan Hemp, that specimens in different states of preparation should be sent home, as prepared by the hill people, together with specimens of the Hempen rope and sackcloth of the Himalayas.

ART. III.—*The great Natural Resources of the newly acquired province of Muttock in Upper Assam—the Progress of the Tea Cultivation.*

[Read at the Meeting of the Society held on the 12th Feb. 1840.]

From Captain Jenkins, Agent of the Governor-General in Assam, dated Dibroo Mookh, Assam, 4th January, 1840.

Your obliging favor of the 16th ultimo only reached me last evening, and I lose no time in replying to it. The report on the specimen of Moonga by the Silk Committee is very favorable indeed, much more so indeed than I had any expectation of; it holds forth most pleasing prospects for us, as the extent to which the silk could be supplied from this Province is almost unlimited from the abundance of the Tetranthera plants, on which the worm feeds, and from the facility with which they can be propagated. Two Companies of the 36th Regiment have been hutting themselves over against me in what they thought was a natural forest, but in reality it is a deserted plantation of Soom trees, one of the best of those plants, and all this part of Muttock is covered with old plantations of the same tree.

The moment I perceived the report of the Committee in the *Courier* I wrote off to Mr. Watkins and begged he would endeavour to comply with the request of the Committee as early as practicable and send them the required sample for London. I shall not hear from him for some time, but I will write you again when I have his reply.

I fear I cannot be of much assistance to you in giving advice as to the cultivation of cotton, but I should think with your Committee that you would do little satisfactory with the foreign cottons except by neez cultivation. I wish we could get a pair of your Americans here. We have very superior lands indeed throughout Muttock for cotton, and we can give you land for nothing to any extent, and I know no place where you are more likely to find the ryots tractable. They are all cotton cultivators, and owing, I suppose, to the fitness of soil and climate, the cotton of Muttock, which, to all appearance, is the same stock as that of other parts of Assam and of the Garrow country, is far superior to any other in the valley, and fetches from 1-8 to 2-8 per md. more in the market on the kupas. All the natives would try any other cottons, for they have no prejudices as to seeds, and a much better cotton might of course be raised. With the assistance of our Missionaries, our officers, and the superintendants and assistants of the Assam Company, seeds might be distributed largely round the country, and much attention could be paid to their cultivation.—Muttock has only just fallen into our hands, but I hope there is a very fair prospect of our soon rendering it a most important district. Tea, caoutchouc, silk, sugar and cotton are abundant, and the lands are well adapted to any cereal crops. It was the graden of

Assam and may readily become so again. We have found a station close to this where Captain Vetch will reside, and we expect to make a thriving town of it immediately.

Khas lands (which ours all are) ought, I should think to be more favorable for your experiments than zemindary, as being more under the control of the Government officers; but if you can get resident zemindars in proper districts to assist you, they will be able to do more than any Government officer; but the difficulty is to catch intelligent resident zemindars. You should particularly apply yourselves to the raja of Gyah: much of his country must be good for cotton, and he is the best farmer of any native on our side I believe.

Mr. Bruce has made for Government this season 120 boxes of black tea, and 70 of green. With the means of the Company this might be increased next season a hundred-fold,—were the Government establishments transferred at once.

ART. IV.—*Report on some Samples of Acclimated Upland Georgian Cotton grown at Hansi, of Indigenous Cotton from Jalown, and the third generation of acclimated Peruvian or Pernambuco Cotton; also Samples grown at the Secundra garden from Egyptian, Seycelles, Malta, and Nankeen seed; also a Sample grown at Goruckpore from Bourbon seed; and on two Samples from Arracan.*

[Read at the Meetings held on the 8th April and 8th July.]

The Members of the Cotton Committee having had the samples of cotton lately received from Mr. Hurry, Captain Showers, and Colonel Skinner, before them for examination, have individually reported as follows:

MR. WILLIS'S REPORT.

Calcutta, April 2, 1840.

I have examined the several specimens of cotton sent, in accompaniment with your circular, to the Members of the Cotton Committee, dated the 19th March, and find them as follows:

That the three specimens Nos. 1, 2 and 3, from Captain Showers, A. D. C. of the Governor General, stated to be the produce of Jalown, are remarkably clean and well gathered: excellent in colour and complexion, indicating thereby healthiness of growth. Each very flexible, and from very fine for No. 1, down to fine for No. 2; and good fine for No. 3. *Remarkably short* in fibre, and even much shorter than specimens of Bundlecund cotton frequently to be met with as an ordinary mercantile commodity for sale in the bazars. It is rather deficient also in strength. The No. 1, is rather better than the No. 2; and the No. 2, rather better than the No. 3.

That the specimen No. 4, of Peruvian kind, third generation of acclimation, is very creditable and valuable. It is gathered remarkably clean; it is good in colour, though I think it deficient in that hue, which indicates the best and most natural grown cotton. It is neither flexible nor fine, but on the contrary harsh and uncongenial. It has good fair length and good fair strength of fibre. But as I have seen one or two specimens of imported Peruvian, from cotton possessing all the merits of great flexibility and fineness, great length and also great strength of fibre, I consider this specimen to be degenerate, notwithstanding its greatly superior value, when compared with the ordinary cottons of this country.

That the specimen No. 5, of a large bale sent by Col. Skinner, from Hansi, is satisfactory; first, inasmuch as it represents the article gathered in a considerable mass, and apparently without any care in regard to a separation of the dirty and leafy particles and stained cotton, from that which is clean. It appears to be the produce of the American green seed, or Upland Georgia cotton, though in what year of generation or descent from the original imported seed, is not stated.

As observed, it is gathered altogether as it comes from the pod, and therefore unclean and stained, and consequently greatly prejudiced in value. It is flexible and fine; it has good fair length, though rather too short a fibre; and it is somewhat deficient in strength; and though in all these respects it is superior to much of the ordinary cotton of this country, I think it inferior to the general mass of Upland Georgia cotton, which is usually imported into England from the United States.

(Signed) JOS. WILLIS.

Mr. Huffnagle's Report.

Calcutta, April 6, 1840.

In accordance with your wishes as per "Circular," I beg to add my remarks upon the samples of cotton sent, although not much reliance can be placed upon my judgment. I know very little about the article, and particularly of its value in the Liverpool or London markets.

Nos. 1, 2, and 3, Jalown.—Fine, weak, and of *extremely short* staple, and as the value of cotton depends very much upon the length of fibre, these specimens must be considered as very inferior, although the colour is good, and the cotton appears to be free from remnants of seeds, leaves, &c.

No. 4, Peruvian.—Has comparatively a strong and long staple, and is greatly superior to the ordinary cotton we meet with in the bazars.

No. 5, Hansi.—This specimen I think the best; it has lustre, and in length of fibre equals the last, (No. 4,) without its harshness; it has been very imperfectly cleaned, and contains remnants of crushed seeds, besides being much discoloured.

Of the value of each, I can say nothing, (Mr. Willis can tell us all about it.) but I do not think that the best would have a comparison with the ordinary American cotton, exported for the English market,

(Signed) CHARLES HUFFNAGLE.

MR. OWEN POTTER'S REPORT.

Calcutta, April 7, 1840.

The cottons you have sent me for report may merit the following remarks:

Nos. 1, 2, and 3, all short staples.—No. 1, the best; 2, next best, and 3, the worst—none of them equal to the bulk of the Guzerat cottons sold in England under the general term of Surats. 2 and 3, are quite unsuited to manufacturing purposes, but No. 1 might meet with a limited consumption to mix with other cottons of longer staple but inferior color. The bulk of Jalown cotton never comes to market so free from leaf and seed as these samples.

No. 4, I have reason to doubt being Peruvian cotton, and am inclined to think it Pernambuco. The seeds of the latter *cluster;* of the former they do not. The staple is regular, but not so long as generally characterises this description of cotton. It is harsh, does not open freely, and is not as silky as it ought to be. The cotton of Peru is always irrigated. This cotton I believe has not had that advantage. In growing this cotton, which I believe to be the production of a standard tree, it becomes a matter for consideration, whether the same quantity could be produced on the same ground as from the annual plant, now generally cultivated in India.

No. 5, has one great fault; viz., that the staple is very irregular, portions of it being as short as No. 1, (Jalown,) and part longer than No. 4, (Peruvian.) The fibre is fine, silky and tolerably strong, but the color is dull and unhealthy looking; it is stained, leafy and seedy.

No. 4, if from Peruvian or Pernam seed, and No. 5, if from Georgian, have certainly both degenerated, but the Peruvian or Pernams not so much as the Georgian.

(Signed) OWEN POTTER.

SAMPLES.

No. 1. Sample of Cotton grown at the Secundra Garden from Egyptian seed.

No. 2. Sample of Ditto, Ditto from Malta seed.

No. 3. Sample of Ditto, Ditto from Seychelles seed.

No. 4. Sample of Naukin Ditto, grown at Ditto.

No. 5. Sample of Arracan Cotton, in a *clean* state.

No. 6. Sample of Ditto,—*uncleaned.*

No. 7. Sample Pods of Cotton, grown at Goruckpore from Bourbon seed :

Minute by Mr. Owen Potter.

The Cotton Samples accompanying may merit the following remarks :

No. 1. Good healthy color, retaining every *appearance* of Egyptian cotton, but would be of much less value than "good to fair Egyptians" in the market, on account of the *irregularity* of the length of staple apparent in the sample.

No. 2. Not merchantable in the English markets.

No. 3. Fine fibre, slightly stained, fair strength ; a useful Cotton which would meet with an extensive consumption in England.

No. 4. Same remarks as to No. 2.

No. 5. Clean, good color, harsh, no staple ; would not meet with any demand for English consumption.

No. 6. Same in kupas very tenacious to the seed.

No. 7. Very inferior in point of staple to the generality of acclimatized Bourbon Cotton, and judging from the very successful introduction of this seed in Guzerat and other parts of India, I conclude the soil in the present instance was not even suitable.

(Signed) OWEN POTTER.

Minute by Mr. Charles Huffnagle.

I have looked over the specimens of Cotton forwarded for inspection, and venture upon the following remarks :—

Nos. 1, 2. 3, 4, the produce of the Secundra Garden, are interesting from having been grown upon the same soil, Nos. 1 and 3 possessing good qualities, while Nos. 2 and 4 appear to me to be worthless.

No. 1. Is soft, of good color and staple, of fair length.

No. 3. Much the same in appearance, the staple not so long, but greater in strength than No. 1. The fibre in both instances is irregular and the specimens are stained. This will be the case however until the proper mode of gathering the Cotton has been introduced. If full grown ripe pods are collected in the same parcel with others but half matured, along with sticks and green and dried leaves, we must expect discoloration as well as irregularity of fibre.

Nos. 2 and 4. Weak, and without strength or length of staple.

Nos. 5 and 6. Cotton grown at Arracan ; very inferior : harsh and short staple.

No. 7. Cotton grown at Goruckpore from Bourbon seed. Fine and silky, short and weak fibre. If our *friends,* who send us these specimens, the produce of *foreign seed,* would in every instance forward a Sample of the Cotton *of the country grown upon the same soil* in the immediate vicinity, their contributions would be doubly valuable ; we might then be able to judge of the advantage or otherwise, of importing foreign seed. Where are the Americans who were to make their appearance some six months ago? I begin to feel anxious about my fellow-countrymen.

(Signed) CHARLES HUFFNAGLE.

In reference to the query put by Mr. Huffnagle, —the Secretary stated to the meeting that no information was before the Society as to when the Court of Directors intended to fulfil their promise.

ART. V.—*Measures for Promoting the Flax Culture in Hindustan. Papers submitted by Experimental Flax Company and Members of the Society. Report thereon and favorable representation made to the Government of India accordingly.*

[Read at the Meetings of the Society held on the 13th May, 10th of June and 8th July.]

At the several meetings held on the above named dates, documents of a highly important character, bearing on the Flax culture of Hindustan were submitted and duly reported on. The first series consisted of communications from Messrs. Dwarkanath Tagore and Remfry, the Trustees of the London Flax Company in India. These gentlemen state that they have much pleasure in putting themselves in correspondence with the Society on the subject of the cultivation and manufacture of Flax in British India, it being a subject which appears to have excited very general interest. By the enclosures which *they transmit, they remark*, that it will be seen that a Society has been formed in England, and that Messrs. James McKillop, Henry Gouger, and Alexander Rogers have been appointed as the Trustees of the Society.

The papers enclosed with their letter consist of, 1st, The list of persons who have received Flax seed from the "Flax Experimental Society," and their current reports thereon. The names on the list amount to thirty-three in number, and the reports go to state whether the crop has been good or bad. 2ndly, A statement of the probable outlays of Flax Experiments provided that they are not carried forward to next year for cultivation then, and that no additional supplies of seed come from England.

Cost of three dispatches of Flax seed and a small supply of Russian Hemp, as per invoices £225. 7. 3 @ 2*s*.	2253	10
Expenses of landing and duty	100	0
Belgians' passage out, supposed	1500	0
Their board and lodging in Calcutta, including sundry outlays for their trip up country, and boat-hire	427	0
Their salaries and expenses at per month 375 Rs., 2 years	9000	0
Sets of Tools as Models to each experimentor, say 30 sets at 30 per set	900	0
Reimbursement to Experimentors, the cost of cultivating lands, whether the seed has		

grown or not, and of rents say 300 beegahs @ 7 Rs.	2100	0
Charge the cost of despatching the seed, as yet unknown, say	500	0
	Rs. 16780	10

3rdly, Statement regarding operations for cultivating Flax in India. These consisted in engaging, in December 1839 and January 1840, the services of individuals who were thoroughly acquainted with the process of the culture and preparation of the *linum usitatissimum* in India, where it was known to grow and produce seed superior to that of Russia. As a preliminary measure, there was also seed, in considerable quantities, of Dutch and Riga kinds, dispatched from England to India, viz., 31 casks per "Diamond," 34 per "Falcon," and 20 per "Jessie Logan;" the whole was received and distributed to gentlemen, with most of whom the Trustees were otherwise unconnected, and who kindly offered to co-operate in their different districts on merely being promised to have all expenses defrayed by the Society; the Belgians arrived in Calcutta in January last per "Vernon;" one of them is a cultivator and the other a preparer; they brought with them the various tools required for the proposed experiments, and on arrival were employed in superintending the making of duplicates of the tools, for distribution to parties who had sown seed, and on completing which (the time having arrived for narrowly watching the ripening of crops), they were both dispatched to where the largest quantity of plants was likely to be available for preparation. Fifty-one casks of the entire quantity of seed received, viz, that per "Diamond" and "Jessie Logan," were found (when sown) to have been spoiled on board ship, and have not vegetated. The parties have thus been deprived of the results of experimenting in every district; the value also of nearly 2-3rds of the seed, and cost of culture has thereby been lost; yet, foregoing in the present season something in the quality of expected fibre as also seed, the Trustees hope to have seed for probably an extended cultivation next year, in addition to returns from seeds which were not sown, and are still on hand. To facilitate and instruct in the cultivation, the Agents, Messrs. Hamilton and Co. reprinted a compilation prepared by the Flax Society on the culture of Flax, and a translation of it in Bengali, simplified to the comprehension of Natives, was kindly made by Baboo Prossonocoomar Tagore; these pamphlets have been circulated to the "Landholder's Society," Agricultural and Horticultural Society, and to individuals, and are still available to any parties willing to cultivate, or wishing for them.

Experimentors were also directed to sow, in juxtaposition with the Europe seed, some Dasee or Country seed, which in a few instances was done.

Reports from the various districts have come to hand showing the various success of individuals, and which also shew that where properly cultivated, and a proper selection of lands are made, both European and country seeds come forward with all the luxuriance that characterises the crops in Europe, and in length and fineness that belonging to the Flax Company, is pronounced by the Belgian workmen as equal to European. The prejudices of the natives to sowing the large and indispensable quantity of seed to obtain length and fineness is a temporary difficulty that has to be overcome.

The Belgian workmen are now at the Factories of Dr. Rogers on the Bagrettee River in the Burdwan District, preparing the crops and teaching native workmen, and the Trustees are daily expecting reports from them, accompanied with samples of Flax. They are to return to Calcutta shortly for the purpose of preparing Flax from specimens of the average of plants grown in the districts, which will be sent to Calcutta for that purpose, the parties, who cultivated, waiting until instructed whether to attempt it themselves or to forward the remainder here for preparation.

Should the experiments at present going on, in the preparation of the fibre from the plants, equal the expectations reasonably formed of it, as to strength, the Trustees could, by having all the plants brought to Calcutta for preparation, establish a school for teaching the method of preparation to natives, and thus supply the country with means of successfully making Flax a staple production in a short time.

An offer has been made by Baboo Dwarkanath Tagore of a house and premises at Maniktollah free of rent for this purpose; but it is suggested that if premises could be obtained near Calcutta, situated near the River it might facilitate operations.

A separate statement shows a portion of the outlays incurred in this experiment; but to this must be added cost of preparation of crops, bringing them to Calcutta, &c.

Further supplies of seed have been ordered from England so as to keep up the stock.

The tendency of these experiments, it is presumed, is to benefit the country more particularly than individuals, because, immediately the crops are known to succeed, and are profitable, the cultivation will become general; and it being a crop that need not interfere with Indigo, Sugar, Rice or Cotton, the consequence will be additional industry, and wealth to all; from the evidences in the possession of the Trustees of specimens of Flax attempted to be prepared by individuals without aid from professional workmen, it seems impossible that Flax can be made like that article of commerce in Europe without instructions in the art of preparing it: this shows that the arrangements that have been adopted were prudent and proper.

Facilities might be offered to make the cultivation of Flax an immediate object of enterprise all over India, and by allowing Flax to be exported on equal terms with Cotton, i. e. free of duty, our distance from England and the consequent enhanced cost of freight, compared with what is supplied from Russian or European ports, would be in a measure compensated for.

The series concludes with a correspondence which has passed between the representatives of the Flax Company in London, the Honorable the Court of Directors and the Government of India. The letter to the Honorable court is to the effect that a certain number of gentlemen in London interested in the trade of our Eastern Possessions, after bestowing much attention on the subject, had good reason to believe that a supply of Flax in every respect suited for importation into England might be obtained in India. That this being their firm conviction they formed themselves into a Society with a view to test by experiment the correctness of their belief, and proposed to raise a Capital of £10,000 for the purpose of carrying out their object. That they procured two Belgian Farmers with an engagement to entertain them two years. The subscriptions received by the Society have amounted to somewhat above £2000. The letter then goes on to state, these gentlemen desire to call the attention of the Court to the importance of the objects of the Flax Society to the Revenue, Commerce, and Prosperity of our Indian Possessions. The Trustees venture to hope, therefore, that the Honorable Court will take all the circumstances into consideration, and looking to the great importance of raising new and valuable products in a country which more than any other is wanting in agricultural prosperity and the profitable means of employment of its dense population, regarding also the difficulty of obtaining in this country any large amount of subscription for the conduct of a mere experiment, they trust the Honorable Court will render assistance in carrying out the important and interesting object which they have in view.

The Honorable Court reply that the letter of the Trustees "shall be forwarded to the Government of India, who will be directed to adopt such measures as they may deem most expedient, should any application further be made."

On receiving this reply the Trustees addressed an application to the Government of India wherein the Trustees ask that a liberal premium (say 10,000 Rs.) in some degree proportionate to the risk which they have incurred, and intend to incur, in furtherance of the interesting object in which they have engaged, be offered to them for the first supply of Merchantable Flax to be obtained from, and the produce of five English Acres of land, prepared by the Belgians, or others under their instruction, and suited for consumption in Europe. The Trustees engaging in the event of receiving the premium for the produce of the crops now in course of cultivation, to send out a further supply of European seed, and to provide other requisite means for prosecuting the experiments, and further testing its success, in the course of the next year, and also undertaking to furnish the Government, the Agricultural and Horticultural Society of Calcutta, or such other parties as may be nominated, with a history and full detail of the progress of the experiment and of its actual cost. In case, however, the Supreme Government should rather feel disposed to assist by paying some part of the expenses which have been incurred, they, the Trustees, desire to inform the Government, that they have actually paid, or are under engagement to pay about the sum of £450, on account of the two Belgian Farmers whom they have sent to Calcutta, and ask for that amount to be granted by Government—the Trustees undertaking all the matters mentioned above, and also to perform their contracts with the Belgians.

These several documents having been gone through, the next communication submitted on the same subject was a letter from Mr. Tucker at Azimghur, enclosing a paper on Flax from J. Sutherland, Esq. of Azimghur, in the hope that it may be useful to the Flax Committee of the Society in compiling a Manual for the growth and preparation of Flax. Mr. Tucker also wishes that a Manual regarding Hemp should also be published by the Society. He says that several individuals are anxious to try the manufacture—one gentleman alone has given instructions for 300 begahs being laid out in Flax and Hemp. The great want, Mr. Tucker writes, is one or two *practical* Flax dressers who understand the business. Several gentlemen and weavers have tried to prepare Flax *theoretically*, but all their efforts have failed.

A note from Mr. Fergusson (of the Firm of Fergusson, Brothers, and Co.) was next read, in which that gentleman states, that he begs to present to the Society a specimen of Flax which has been prepared by an experienced man from plants which grew in the neighbourhood of Monghyr, and were pronounced equal to any seen in Great Britain. From the result of this experiment Mr. Fergusson considers himself justified in stating, that he feels quite certain that no preparation will ever make Flax as now grown in India worth anything. Mr. Fergusson thinks that the climate and soil are adverse to the plant ever yielding a fibre fit for any useful purpose, and that no cultivation will ever make it so.

A letter was next read from Mr. Hodgkinson, who forwards two specimens of Flax, one of Irish growth worth from £25 to £28 a ton of 20 cwt.; and the other of Indian produce worth from £30 to £35 a ton grown in the neighbourhood of Calcutta from imported seed: on comparing the two samples Mr. Hodgkinson states, that for length, strength, and softness the Indian Flax is superior to the Irish in all these qualities, as well as in that of color, cleanness, and general appearance.

Mr. Hodgkinson is desirous that the samples should be laid before the Society in order to prove that not only good but really fine Flax can be produced in India, to check the dissemination of information based in Mr. Hodgkinson's opinion, on wrong data, and which if circulated might materially check the efforts of many now engaged in the cultivation of this valuable staple of commerce.

Mr. Hodgkinson having visited, during the last three years, Holland, Zealand, Belgium, France, and Ireland, expressly for the purpose of acquiring information on this subject, thinks, he may be allowed to declare his opinion to be, that there exists no impediment to the production of Flax in India of a quality to compete with that of any country in the world. In India not one planter in a hundred will put the requisite quantity of seed into the ground, and to this circumstance Mr. Hodgkinson attributes the disappointment that has hitherto attended the experiments.

A letter was next read from Captain Dixon, Superintendent of the Mairwarrah States, stating that Government having called on officers in charge of Districts to report on the practicability and advantages of the cultivation of Hemp on a large scale for manufacture into cordage, he would beg leave to suggest to the Society that all information respecting the culture of the plant, the periods of sowing, the quantity of seed per begah, and all the other processes generally, so as to make it a good and remunerative marketable article, be published for general benefit.

As Bhang is a plant indigenous to Hindustan, there does not seem to exist a doubt, Captain Dixon observes, as to its extended culture. *It may be grown to any* extent regulated alone by the demand and return. Captain Dixon then goes into particulars as to when and how the crop can best be raised. His statement goes to show that it can be best grown as a *Kurreef*, but with irrigation can be made a *Rubbee* crop.

Samples of well dressed, marketable Hemp would greatly assist in showing the standard to which the article is to be brought to ensure a ready reception in European markets.

The importance of this subject, which involves, in a large degree, the prospective increase of the Agricultural and Commercial prosperity of India, will, Captain Dixon hopes, plead his apology for bringing the subject to the notice of the Society.

At the conclusion of the perusal of these various documents the importance of the question was duly adverted to by the Meeting; and for the more effective mode of arriving at an opinion as to what had best be done, the subject was referred to the Flax Committee.

FLAX COMMITTEE.

SITTING, MAY THE 25TH, 1840.

Present.

Messrs. Fergusson, Hodgkinson, Ramcomul Sen, D. W. Speed, G. F. Speed and Dr. Spry.

Visitor.—Mr. Guillaume Deneef, Belgian Farmer.

On the motion of Dr. Spry, seconded by Mr. D. W. Speed, Mr. Fergusson, was called to the chair.

Read a note from Dwarkanauth Tagore, Esq. stating his inability to attend from severe indisposition, and proposing that the Meeting should adjourn, as he was anxious to attend in order to offer explanations on different matters connected with the object of the Meeting.

The Committee determines that the examination of such portion of the labour assigned to it by the Society as may not have reference to pecuniary details be now entered on, leaving the consideration of the latter till the Committee is favoured with the attendance of Dwarkanauth Tagore, Esq.

On the termination of the perusal of the several documents now recorded the Committee proceeded to record the evidence of Mr. Guillaume Deneef, Belgian Farmer, who had been sent to India by the London Flax Company. Mr. Deneef states that he arrived in Calcutta about 2½ months since on board the ship *Vernon*. That he has been engaged the greater part of his life as a cultivator of Flax in Belgium. That since his residence in India he has been examining into the condition of the Flax culture and the nature of the soils in Bengal, and that from the result of his investigations as far as they have gone, he is convinced that the Province of Bengal can furnish an article that will in every respect compete with the Belgian Flax ;—that he has arrived at this conclusion from his own personal experiments, and in testimony exhibits to the Committee various specimens to prove the correctness of his assertion. He states that from his observation he assumes that the begah of Bengal, which is about a third of an acre, can be made to furnish 100 lbs. of seed from European or foreign seed; that he thinks it not unlikely that from dasee or country seed an additional quantity, (about 12 per cent.) may be calculated on. That he has observed that in this part of India (Bengal Province) the cultivation by natives is much deteriorated, by growing along with the linseed plant, the mustard seed plant; that this is very detrimental to the successful culture of the linseed plant for fibre, and that every Bengal begah of ground should have from 33 to 35 lbs. of imported seed or 40 to 42 lbs. of country seed for its sowing. Mr. Deneef dwells much on the importance of the ground for the reception of seed being very carefully prepared and made as fine as possible, and that the seed should be sown so as to be covered by about half an inch of soil. By so doing the plant grows of an equal height, and the roots are not too long.

Mr. Deneef then proceeded to illustrate his observations by exhibiting the various specimens of Flax which were before him. He pointed out the peculiarities of each, and entered into an explanation of the weakness of some, and the strength of others. These specimens, he remarked, clearly showed, in his opinion, in the most striking manner, the difference to be expected from a careful manipulation of the stalk.

The specimens of Country Flax submitted were valued by Mr. Deneef as follows[*].

Sample, No. 1.—Prepared from imported seed by Mr. Hodgkinson, value £47 per ton, and if only a little better dressed would be worth £53.

Ditto, No. 2.—Ditto from ditto by Mr. Hodgkinson, value £44, and if better dressed and coloured £60.

Ditto, No. 3.—Ditto by Mr. Hodgkinson from *country seed* (heckled) ; value £66.

The tow from the same is worth £18, and another sample from the same is worth £14. The proportion of tow to the flax is upwards of half or about 3-5ths.

Ditto, No. 4.—From Monghyr, country cultivation and seed, prepared by a European ; value doubtful.

Ditto, [†]No. 5.—Prepared by Belgians from fairly cultivated plant of native seed mixed with mustard seed ; value £56.

Ditto, No. 5½.—A smaller specimen of the above, prepared in *fresh* water.

Ditto, [†]No. 6.—Prepared by Belgians from fair cultivated plant of native seed mixed *much* with mustard seed, second quality, £44.

Ditto, No. 7.—Three samples of heckled flax from country seed grown at Bowsing and prepared by the Belgians ; value £60. Yielded very little tow.

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[*] The correctness of this and the subjoined valuations have since been proved by the corroborative testimony of a practical Liverpool merchant.—H. H. S.

[†] Nos. 5 and 6 were prepared in *stagnant* water, after other flax (No. 5½) had been steeped.

SITTING, JUNE 8, 1840.

Present.

Messrs. Fergusson, Hodgkinson, Ramcomul Sen, Watson, Dwarkanauth Tagore, D. W. Speed, G. F. Speed and Dr. Spry.

Visitor.—Mr. Guillaume Deneef.

Read again the following paragraph contained in the "Statement regarding operations for cultivating Flax in India," forwarded by the Calcutta Trustees of the London Flax Company.

"Should the experiments at present going on, in the preparation of the fibre from the plants, equal expectations reasonably formed of it as to strength, we could, by having all the plants brought to Calcutta for preparation, establish a school for teaching the method of preparation to natives, and thus supply the country with means of successfully making Flax a staple production in a short time; an offer has been made by Baboo Dwarkanauth Tagore of a house and premises at Manicktollah, with tanks and lands appertaining thereto, amounting to about 60 beegahs, free of rent for the purpose."

REPORT.

The Committee having duly considered the testimony of Mr. Deneef, together with the individual experience of its own Members, is of an unanimous opinion,—

1st.—That the interchange of seed, from one distant province of India to another, should be carefully attended to, and also its importation from Europe and the United States constantly encouraged, as it appears clear to the Committee that the seed, if not changed, fails to produce a good fibre.

2nd.—That the culture and preparation of Flax in India, so as to be able to compete with the Flax of Belgium or Russia, can only be effected by practical European growers instructing native cultivators in the art; and further, that an entire change in the mode of cultivation as well as in the preparation of the Plant is necessary to produce the article in a proper state.

3rd—That the Committee has at present no data on which it can form an estimate as to the quantity of flax which a beegah will produce, and therefore can form no opinion as to the profit which would result from the cultivation.

Four hundred pounds of good clean Flax and 8 or 10 bushels of seed from an acre, is assumed a medium crop on favorable soils in the United States. In Great Britain sometimes eight hundred pounds per acre is obtained*. If therefore a Bengal beegah will yield from 1½ to 2 maunds of Flax, the produce will be equal to that of other countries, and this, from a memorandum furnished by Mr. Leyburn of his own experience, in Shahabad, appears to be fully probable.

The Committee feels the liberal and very handsome proposition made by their Member, Dwarkanauth Tagore, Esq., to be deserving of the most favorable consideration; for it is impossible, in the estimation of the Committee, to calculate the extent of benefit which may accrue to the commerce of the country by a successful result accruing to an improved Flax culture.

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* See "The Complete Farmer, and Rural Economist," page 107.

The Committee therefore desires to call the attention of the Society to this offer, with an unanimous recommendation that it be accepted, and that the Society shall co-operate in the direction of the establishment, so that the amplest opportunity for instruction and experiment be afforded.

The Committee *considers, with reference to the assistance called for by the Flax Company, that under* certain modifications the aid asked should be granted. The alterations which the Committee suggests are, that a premium should be givem on ten tons of good merchantable Flax being produced that shall yield a fair profit in the English market. after deducting all expenses, so as to compete successfully with the produce of other countries, and that the Committee recommends the Society to back the request of the Flax Company for a grant or a premium of 10,000 Rupees on these terms.

With reference to the requests in the letter of Mr. Tucker and other Members, calling for information on the subject of the Flax Culture in India, the Committee considers that no sufficient practical knowledge of the culture of the linseed plant for its fibre is possessed by it, and therefore would prefer waiting the result of experiments before recommending the issue of any brochure on the subject,—referring in the meantime to the excellent pamphlet, which is already before the public from the Flax Company, to their present Proceedings, as well as what is contained in the volumes of the Society's Transactions and other works.

(Signed) W. F. FERGUSSON, *Chairman.*

The Report having been read, and discussed, the following resolution was moved by Mr. Fergusson, seconded by Mr. Hodgkinson, and carried unanimously.

The Flax Company having submitted to the Society statements and particulars of their proceedings, and copies of their correspondence with the Court of Directors and the Supreme Government, on the subject of a premium for the successful production of Flax in this country, Resolved, that the Society support the request, that Government should give a premium on the terms proposed by the Committee to whom the subject was referred.

The Report and resolution having been duly forwarded to the Supreme Government, the following unfavorable answer was received in reply.

To H. H. Spry, Esq. M. D.

Secretary to the Agricultural and Horticultural Society.

Genl. Dept. Sir,—I am directed to acknowledge the receipt of your letter dated the 3rd instant, forwarding the Report therein mentioned of a Committee of the Agricultural and Horticultural Society on the subject of the cultivation of Flax in India, with the recommendation of the Society that a premium be given by the Government of 10,000 rupees upon the production of ten tons of merchantable Flax yielding a fair profit in the English market.

2. In reply I am desired to state that, after considering the subject with all the attention due to the wishes and suggestions of the Society, His Lordship feels himself unable to submit a proposition to the

Government of India, with a view to obtaining authority for the offer of this premium.

3. His Lordship cannot but regard with interest the public spirited proceedings of the Gentlemen who have come forward to promote the improvement of the cultivation of Flax in India, but it is only in very rare instances, and with the view of exciting a direct and general competition, that he would attempt by encouragement on bounty to influence the course of Commercial and Agricultural enterprize, and he does not feel that the case before him is one which would justify the special interference of the Government.

I am, &c.

G. A. BUSHBY,

Secy. to the Govt. of Bengal.

Fort William, the 29th July, 1840.

Art. VI.—*Capability of Amherst for the production of Sugar—its non-admissibility into the Port of Calcutta.*

[Read at the Meeting of the Society held on the 13th May.]

To H. H. Spry, Esq.

Secretary to the Agricultural Society, Calcutta.

Dear Sir,—I am led to infer from the conditions for the competition for prizes for staple productions published in your last Annual Report, that the productions of this province (Amherst) are not admitted to such competition. I have already communicated to the Society the adaptation of this province in particular for the cultivation of sugar; and have produced a muster according to the Society's Report thereon, "equal to the best Benares," to which I have now to add the following extract of a Report upon a muster of the same sugar, which I sent to a mercantile friend in Singapore, well acquainted with the article from long experience—"The sample of sugar of your own making is the best I *ever* saw, and would doubtless command $½ to $1 per pecul more here, than the very best Siam ever imported. It is now, after lying in my muster room for months and frequently exposed to the air, as dry as ever, and of very strong grain. You could easily dispose of 1,000 tons of this sugar here annually." This flattering testimonial to my endeavors to bring to notice the staple productions of this coast; coupled with the circumstance of being excluded from all communication with the branch of the Society in the Straits or elsewhere, induces an opinion that I have some claim, to be allowed the same privileges as those stated in the conditions, as exclusively enjoyed by Bengal and the N. W. Provinces.

As I may be precluded by want of opportunity, from communicating with the party in time to reach by the 1st of May next, and being anxious to establish the credit of this coast for its sugar, I beg leave to send accompanying this, two bottles Nos. 1 and 2 containing Samples of purified sugar I am now making. No. 2 having been in pot a longer time than No. 1 will account for the difference in color. The circumstances under which I am placed will plead excuse for irregularity in not conforming to the terms of the conditions stated; but should this communication meet the notice of the Society, and effect the object for which it is written; and more especially should the musters I now forward be deemed by you worthy of competition, I shall on receipt of your answer, forward the quantity required (although rather inconvenient from the distance) together with such particulars as are required by the published conditions.

I am strongly of opinion that this sugar is eminently suited to the wants of the home sugar refiners, from its firm and large grain, and strong saccharine quality, and to put this beyond a doubt (being about commencing an extensive cultivation) it is my intention to send a shipment of maunds 50 or 60 home this season: a difficulty exists however in doing so from this (Amherst), as opportunities are very rare of vessels going direct; I am under the necessity therefore of sending it viâ Calcutta, and here another obstacle presents itself in the "act prohibiting the import into Calcutta of sugar from any port into which foreign sugars may be imported." I am not aware if there is any clause admitting its importation for transhipment, and shall feel much obliged by your informing me if such can be effected.

I have the pleasure of forwarding by the present opportunity accompanying the musters of sugar, a parcel containing a quantity of silky fibre obtained from the leaves of the common Pine Apple; its fine texture and staple induces me to consider it a valuable article for the home market, and as the quantity procured from a single leaf is considerable (the sample shewing the separate leaves) and the labor attending its separation from the pulpy mass, very trifling, I hope to be favored with your report, which if favorable may lead to a useful application of one of the many luxuriant productions of this coast.

I remain, &c.

EDWARD O'RILEY.

Amherst Town, 25th March, 1840.

To H. H. Spry, Esq. M. D.,

Secretary, Agricultural and Horticultural Society.

Sir,—I laid your letter of 2nd instant before the Chamber of Commerce, requesting its opinion on the point submitted by your correspondent at Amherst; and I am instructed to inform you, that the Chamber would advise him to send the experimental shipment of Sugar to H. M. Government—or, to apply to the Lords of the Treasury for a special order for its admission accompanied with a certificate of its being the produce of a British Settlement, or if thought preferable, the Government here might be asked to take charge of the Sugar and send it home.

I am, Sir, your most obdt. servt.

W. LIMOND, *Secy.*

Calcutta, Bengal Chamber of Commerce, May 9, 1840.

To H. H. Spry, Esq.

Secretary to the Horti. and Agricultural Society.

Sir,—I have the honour to acknowledge the receipt of your letter of this date, regarding the importation of Sugar from Amherst at this port for re-exportation to Great Britain.

2. Act No. 32 of 1836, Section I. enacts that if any person after 1st December 1836, lands or attempts to land in any part of the Territories subject to the

Government of Fort William in Bengal, any Sugar the growth of a place into which Foreign Sugar can be imported (and I look upon Amherst to be such a place) such Sugar shall be seized and confiscated.

3. I fear under this restriction Sugar from Amherst, though intended for re-shipment to Great Britain, would be liable to seizure if brought to this Port; my construction of the Law may however be erroneous, and I recommend that the Society apply direct to Government for information.

I have the honor to be, &c.

R. WALKER, *Collector of Customs.*

Calcutta Custom House, the 14*th May*, 1840.

The Report which the Sugar Committee made on a sample of the Sugar submitted by Mr. Riley at Amherst was as follows:—the Committee pronounces the Sugar to be "a good strong Muscavado Sugar, rather burnt in the boiling, but very well adapted for the refiners. It resembles Manilla Sugar; and if admitted at the same rate of duty it would fetch in the London Market within about 12 shillings of good Benares"—but as the requisite quantity has not been furnished the Committee felt compelled to withhold their recommendation of the grant of the Medal.

ART. VII.—*Dried Plantains, as a useful Confection.*

[Read at the Meeting of the Society held on the 13th May.]

Communicated by N. WALLICH, ESQ. M. D., F. R. S., &c.

I have very great pleasure in sending a large glass-stopper bottle containing Dried Plantains prepared at Kornegalle in Ceylon by Mr. Morris, Assistant

Government Agent, simply by solar heat, and without any admixture of sugar. They were sent to me by the Right Hon'ble the Governor. Kindly present them to the Agricultural Society at the next meeting, in the name of the Governor.

The Dried Plantains seem to me to be very excellent and deserving of the Society's best consideration. I am not aware that this product has ever before been attempted in this country, but I have a faint recollection that the subject was brought before the Society some years ago, with reference to a similar article prepared on the West coast of Mexico, and presented to the Society of Arts in London by Capt. Colquhoun, R. N. who received a medal for the same, according to the interesting account published in that Society's Transactions for 1832, vol. 50, p. 43. Among the list of new premiums offered by the Society you will find one for a certain given quality and quantity of Dried Plantains:—Mr. Morris's plantains appear to me little inferior to preserved figs, and I should think them as wholesome and nutritious. In case the subject should be looked upon in the same light of real importance, which I feel disposed to attach to it, I would suggest that extracts from the above paper, of Capt. Colquhoun, respecting the American or Mexican mode of preparation, packing, &c. might fitly come on our proceedings, as a guide to those who would be willing to engage in this matter.

I quite forgot to mention that the kind of plantain used by Mr. Morris is called "Suandelle" in Ceylon.

(Signed) N. WALLICH.

Bot. Garden, 27th April, 1840.

The following interesting particulars regarding this excellent confection are contained in the Transactions of the Society for the Encouragement of Arts, vol. L. part I.:—

"The two principal cultivated species of Musa, the *M. paradisiaca* and *M. Sapientum*, are commonly known by the name of plantain and banana. It is the former alone which is the subject of Capt. Colquhoun's communication; and the specimens laid before the Society of Arts were prepared on the western coast of Mexico, where, in this dried state, it is called *Platano passado*.

"The object of Capt. Colquhoun is to direct attention to the dried fruit of the plantain, as an article of produce hitherto unknown in the British Colonies and in European commerce, which would probably obtain a considerable consumption in England, and also be very acceptable as a useful and agreeable article of Sea stock. It may be produced in our tropical colonies in any required quantity, and at a very moderate price; and therefore seems worthy of a fair trial in our West Indian Colonies, especially at the present time, when, from the great change in the situation of the negroes, it may be difficult in many parts to retain the laborious cultivation of the Sugar-cane.

"The sample presented by Capt. Colquhoun was brought by him from Mexico, being prepared in the hot country *(Tierra caliente)* of Jaliso and Mechoacan, whence the fruit is sent to the higher parts of Mexico, the temperature of which is too low for the successful cultivation of the plantain.

"The mode of its preparation is as simple as possible. The fruit is gathered when fully ripe, and is laid on light cane frames exposed to the sun. When it begins to shrivel, the outer skin is stripped off, (the stripping off the skin is a very essential part of the process, as it acquires an unpleasant flavour by drying) and then the drying is completed. During the process it becomes covered with a white mealy efflorescence of sugar, as the fig does under similar circumstances. For convenience of transport, it is pressed into masses of about 75 lbs. each, and is wrapped in plantain leaves. It is evident that the fruit in this state bears precisely the same relation to the fresh plantain that the raisin and dried fig do to the fruits from which they are prepared, and may be expected to keep good as long as either of them. Indeed Capt. Colquhoun's samples, when they came into the possession of the Society of Arts, were about two years old, sufficiently moist, of a consistence and flavour between the date and the fig and very sweet without any acidity: there are no seeds, the whole of the fruit being eatable.

From the above evidence, the Society of Arts are of opinion, that the preparation of dried plantains is worthy of a fair trial in the British West Indies, as being an article likely to enter into competition with figs and other dried Mediterranean fruit in the European markets; and accordingly, they have offered a premium for this purpose.

"The following further particulars, on this subject have been received from Capt. Colquhoun in the form of a letter to the Secretary of the Society of Arts.

"I have been making some extracts from Porter's

Tables of the Revenue, commerce, &c. (relating to the subject of the dried plantains,) to show the quantity of dried fruits imported into and consumed in the United Kingdom. I have gone back for some years, but the average of the last five, ending with 1832, varies so little from that of the two last of that period, that it is not necessary to go beyond them.

" *Quantities of dried fruits imported into the United Kingdom and retained for consumption, in* 1831 *and* 1832. *From Porter's Tables.*

	Quantities imported, Cwts.		Retained for consumption. Cwts.		Net Revenue arising therefrom.	
	1831.	1832.	1831.	1832.	1831.	1832.
Figs, ...	28 772	24,772	20,578	21,293	£22,145	£23,138
Raisins, ...	216 283	187,419	162.20	138,305	173,100	148,447
Currants, ...	212,900	165,658	149,018	142,717	330,341	316,697
Prunes & dried Plums, ...	10,035	4,260	8,641	4,883	10,886	6,713
Total. ..	467,990	382,109	340,441	307,298	£536 472	£494 995

"The rates of duty in 1831 and 1832, were, on figs, 21*s*. 6*d*. per cwt.; on raisins of British produce, 10*s*. per cwt.; on raisins of the Sun, 42*s*. 6*d*.; on others, 20*s*.; on currants 44*s*. 4*d*. per cwt.; and on prunes and dried plums, 27*s*. 6*d*. per cwt.

"Excluding currants, there has been imported, on the average of the five years ending with 1832, of the other descriptions of fruits, 205,986 cwts. per annum, the value of which, at import prices, and without duties, probably exceeds half a million sterling.

"Dates are not mentioned in Porter's Tables.

"I have stated above the whole quantities of the four principal species of dried fruits, but I do not think the plantain likely to come into direct competition with any other than the fig; though it is possible it might tend to reduce and supplant, in some small degree, the consumption of raisins and prunes.

"The importation of figs in the last five years has been as follows:—

In 1828	cwts.	27,562	Total cwts. 123,450. Average per annum 24,690.
1829	,,	21,938	
1830	,,	20,406	
1831	,,	28,772	
1832	,,	24,772	

"The average annual quantity retained for home consumption in the same period was 20,441 cwts.

"The net revenue in 1832, from the duties upon figs, amounted to £23,138. The probable value of the quantity imported in that year, exclusive of duties (say at 45*s.* per cwt.) was about £55,737.

"From all that I can learn, it appears to me that the dried plantain may be expected to be imported from the West Indies, all charges paid, but exclusive of duty, for about 28*s.* per cwt. or 3*d.* per lb. including ten per cent. of profit to the grower. This price, it is true, is calculated on the production of Demerara, where the soil is richer than in the Islands; but, on the other hand, the charges are also higher than in the latter.

"As a branch of domestic industry, suited to the interests and altered condition of the coloured population, I cannot but regard the drying of the plantain for export with much interest, and as likely to prove important to their welfare; and, if I am not very much out in my data, the statement I send you will shew the probable opening there exists for the produce in question. I am, I confess, confident of good results.

"It is a singular circumstance, but one that arises naturally out of the spirit of our colonial policy, and the effect of the encouragement given to the production of sugar, that the plantain should never yet have been thought of for drying for food, and for export in our islands. I do not know if I told you, that the dried fruit was found on trial, when sliced and boiled in a paste, to make a very good pudding."

ART. VIII.—*On the mode of Growing and Manufacturing of the celebrated Chunderie Cotton and Mahmoodie Cotton Cloth; with a sketch of the Geological features of the country. By R. H. Irvine, Esq. M. D. Residency Surgeon, Gwalior.*

[Read at the Meeting of the Society held on June 10.]

I beg leave to forward a specimen of the Chunderie Cotton in the pod; from which the famous Mahmoodie Muslin is made.

The Chunderie Cotton is sown, as usual elsewhere, in June. After the first fall of rain the ground is ploughed, another shower is then allowed to fall, when the ground is manured and worked in with the harrow, then again ploughed, after which the seed is sown broad cast, and the ground again harrowed, which is nearly the course of the usual cultivation; the seed is then left to spring up under the influence of the rains; when at a moderate height, the young plants are carefully hoed, and during the growth the hoeing is seven times repeated, until the matured plant is just about to flower.

Should a cessation of the rains occur, then an artificial irrigation is twice or thrice resorted to in September and October.

Each biggah requires four people to hoe and do other requisite labour.

The result in the same land is by no means equal: some khêts are five times gathered and some seven times.

The cotton fit for the Mahmoodie cloth is never oftener than three times collected: the remainder is common.

The tax paid to the Maharatta Government is two rupees per biggah.

Hindus cultivate, gather, and spin the thread; Mussulmans clean and weave the cloth.

The best land yields 5 or 5¼ mun per biggah along with the seed, which in this state is commonly sold at 13 seers per Chunderie rupee.

The cotton is never separated by the churkie or wheel and rollers; but by the fingers of women and men in their houses.

For the inferior cloths however, the cotton is separated (or "dhoonie jati") by a small bow and string (or kaman) two feet only in length, in the houses of the cultivators, or labourers.

The fine extracted cotton is only used to weave and is not sold.

The cleaned cotton is carefully placed in small conical cavities of paper, and carefully spun by the women, on rude but very fine spindled wheels.

One piece of fine cloth requires 191 of the fine spindles of thread, and these are spun by one woman in 1½ month: the 191 spindles weigh only 30 Chunderie rupees: and the finest sells for 30 Chunderie rupees.

The fine Muslin is then woven by "Julahas" (Mahomedan weavers, so called from Mahmood Julaha who introduced the Muslin manufacture to the Hindus). The warp is eight days soaked in pure water, when it is taken out and made into small bundles: the warp 12 yards long is then carefully laid out, again folded up, laid in water, and then steeped in a gummy solution (from a species of hill crinum); then well worked and compressed under water: then again extended and combed and joined where requisite; five or six men being employed: it is then dried and folded up and taken to the "gar" or weaving loom, and wove into a piece of 11 yards.

One expert weaver makes a piece in 1½ month.

1½ tolah of lace, gold or silver is woven into each end of the piece, and costs 3 Ch. Rs. The dhoby receives 2 Ch. Rs. per piece.

The *finest pieces* weigh only 27 or 28 Ch. Rs.; the piece averages in value 47 Ch. Rs. of outlay in the weaver's hands.

The Raj monopolizes by agents the cloth: each piece is stamped at the Cutwallie according to fineness, and pays 3 pice per rupee to the Raj.

The price is fixed by Moolajee Seth, monopolizer in the town of Chunderie.

The finest pieces cost 80, 90 or 100 Ch. Rs.

Can be made by contract much cheaper; advancing money to the weavers.

The *very* finest cotton is said to be brought to Chunderie from the Saugar district.

This cloth is extravagantly dear: wears long and softly; but is not superior in appearance to the fine Scotch cambrics: and the difference in price is enormous.

The cotton appears by no means very fine.

I enclose specimens of the cloth as worn by the Mahratta nobles: valued at about 30 Rs. per piece.

The whole of this district is secondary and variegated sandstone; fossil remains are found: and between many slabs, perfectly carbonized, water plants are constantly met with. There are no deep nullahs or beds to examine. Would your Society authorize a boring experiment here, providing the tools and the funds? I would willingly superintend.

Will you kindly send me some of the best cotton seeds, and some Virginia tobacco seed.

(Signed) R. H. IRVINE, M. D.

Gwalior, April 4, 1840.

ART. IX.—*On the value of Kyan's Patent as a preservative to Bamboo and other Garden fences in India. By J. Drummond, Esq. Surgeon to the Rt. Hon. the Govr. Genl.*

[Read at a Meeting of the Society held on the 10th June.]

I send sundry pieces of Bamboo which were submitted to the process recommended by Mr. Kyan, for the preservation of wood, &c. some three years ago and upwards; since then they have been exposed to the influence of the seasons as a Garden Fence, during which period another part of the Fence, which was made of Bamboo not so prepared, has been renewed over and over again from being found completely decayed and destroyed by the white ants. The proportion of oxy-muriate of mercury used, if I recollect right, was one pound to 15 gallons of water, and the wood steeped in the solution for 10 or 12 days. I may also mention as a caution that what is sold in the bazar as Corrosive Sublimate, and known by the name of Ruskapoor is not the oxy-muriate of mercury, but a proportion more nearly allied to calomel than to Corrosive Sublimate: the use of this I am aware has led to much disappointment, and has thrown much discredit on the invention of Mr. Kyan. Another great advantage which may be derived from the use of the solution is, that by slightly sponging the mattings of rooms in situations likely to be infested by the white ants it will be found a complete preservation against their ravages.

(Signed) J. DRUMMOND.

1st June, 1840.

ART. X.—*Report on Samples of Assam Tea presented to the Society.*

[Presented at the Meeting of the Society on the 10th June]

The Committee having met agreeably to requisition, proceeded to examine the qualities of the six lots of tea presented to the Society by the Government of India, and also the qualities of four parcels furnished to the Committee by the Assam Tea Company. On the whole of these the Committee begs to report as follows:

Blacks—No. 1. Souchong, Dinjoi Tract, 4th Crop, 1839. Black leaf much darker than the Chinese tea, good smell but burnt; liquor good colour, taste strong and little burnt, rather oily on the surface; according to the selling price in London in April last, we consider this quality worth about 2-5 or 2-6 per lb. in bond in April last.

Ditto, No. 2. Toichu Pekoe, Chabwa Tract, Crop, 1839. The appearance similar to the Orange Pekoe, Blackish leaf—possessing very little of the flavour of Pekoe in smell and rather burnt. Liquor good colour. Taste strong and little burnt; rather oily as in the preceding quality. We should rate the value about 2d. per lb. lower than the No. 1.

Ditto, No. 3. Chatiu, Tingrai Tract Crop, 1839. Large leaf; smell coarse and little burnt. Liquor good colour. Taste very strong, rather burnt and oily; we should rate the value similar to good Bohea, say 2-1 per lb.

Ditto, No. 4. Assam Company Bengal Branch, Pouchong. The best specimen of Black Teas; darkish leaf, good smell, rather burnt. Liquor good colour. Taste good strong and little burnt. The leaf is darker than this quality made in China ; value say about 2-6 to 2-7.

These Teas appear from their leaf, taste and strength to be all good and useful Teas. The fault exists in the preparation, the taste and flavour of all being rather burnt, and the qualities Nos. 1, 2 and 4 not possessing the fine Aroma which attaches to the Chinese qualities, and the oily substance not being taken from the leaf. We think they would be considered in England as very good useful Teas by reason of their possessing much strength and roughness of flavour. No. 3 possesses very good qualities in these respects. On the whole we consider them as successful samples, and the improvement of the manufacturing well worth attention.

Greens.—No. 5. Young Hyson, Ghilgan Tract, 1839. In appearance similar to the inferior qualities procured in China, the smell not so fresh and the leaf not possessing that bloomy look. Liquor darkish coloured, taste bitterish but strong. This quality we think may be rated about 2-6 per lb. by last April prices.

No. 6. Young Hyson, Tingrai Tract. Rather inferior in all respects to the preceding lot; rated about 2-4 per lb.

No. 7. Hyson Skin, Kahing Tract, 1839. A good specimen of the quality, and would be considered a very useful Tea in England; may be rated at 2-4 to 2-5 per lb.

No. 8. Ditto, Assam Company Bengal Branch

Gunpowder. Appearance similar to the Chinese qualities but not so bright or fresh in smell; it is tolerably well made. Liquor darkish, not the fine lemon colour which it ought to be. Taste tolerably clean and less bitter than 5 and 6; may be rated at about 3-3 per lb.

No. 9. Ditto Ditto, Imperial Gunpowder. The Remarks above apply to this quality; rated about 3-6 per lb.

No. 10. Hyson. Inferior in appearance, colour and make; may be rated about 2-6 per lb.

The whole of these Green Teas produce a Liquor of a brownish red tinge, which may arise from some fault in the preparation. They are sound strong Teas, particularly Nos. 8, 9 and 10, and capable of improvement. We think they would be readily marketable in London at about the prices named, which are taken, as in the case of the black Teas, from those prevailing on the 4th April last.

J. W. CRAGG, *Chairman.*

Calcutta, June 8, 1840.

ART. XI.—*On the Flourishing State of Arracan.*

[Communicated by the Government of India, and read at the Meeting on the 10th June, 1840.]

To G. A. BUSHBY, ESQ.

Secretary to Government of Bengal, General Department, Fort William.

SIR,—Herewith I have the honor to submit for the information of the Right Honorable the Governor of Bengal the annexed statement of exports this day received from my Senior Assistant, in charge of the Akyab District.

2. This statement, which includes only square rigged vessels trading from beyond seas and not the numerous Burmese and Native Boats, &c. which yearly export a large quantity of grain from this place, must I think be received as a most satisfactory indication of the increased prosperity of Arracan, and the importance of its grain trade, which, if I am rightly informed, will be found to exceed even that of Calcutta as far as paddy and rice are concerned; and I would respectfully beg to add that the Government are indebted for this happy result of existing arrangements, not to me in the slightest degree, but under Providence to the excellent management of the Assistants in charge of Districts, and to the judicious measures of the Government itself, as regards the moderation of the Revenue Settlements.

I have the honor to be, &c.

(Signed) A. BOGLE,
Commissioner of Arracan.

Arracan Commissioner's Office,
Akyab, the 14*th May,* 1840.

Comparative Abstract of Grain Exports from Akyab, for the year 1838-39 *and* 1839-40.

YEAR.	No. of Vessels.	Tonnage of Vessels.	Quantity of Dhan.	Value of Dhan	Quantity of Rice.	Value of Rice.	Total of Grain Exported.	Total.	REMARKS.
		Tons.	Maunds.	Rupees.	Maunds.	Rupees.	Maunds.	Rupees.	
1838-39	496	51,824	13,64,100	5,17,727	3,31,380	3,03,441	16,95,480	8,21,168	Collections in the Port Fund this year.
1839-40	691	68,486½	20,40,975	7,24,603	5,02,620	4,00,218	25,43,595	11,24,821	Co.'s Rs. 9,822, balance in Port Fund, Co.'s Rs. 36,660-2-3.
Increase in 1839-40.	195	16,662½	6,76,875	2,06,876	1,71,240	96,777	8,48,115	3,03,653	
Decrease in 1839-40.	0	0	0	0	0	0	0	0	

Arracan Senior Asst. Commr.'s Office,
Akyâb, the 14th May, 1840.

(True Copy.)
(Sd.) A. BOOLE, *Commissioner of Arracan.*

(Sd.) A. P. PHAYRE, *Senior Asst. Commr.*

ART. XII.—*Memorandum on the Cultivation and Manufacture of Hemp, &c. &c. as practised in the Hills in the North of India. By Major Swetenham.*

[Presented by the Government of India and read at the Meeting of the Society held on the 10th June.]

I was upwards of seven years in Kumaon, and went abroad a good deal into the interior of the Hills, and I turned my attention to the use made by the Hill people of vegetable substances. The Bhang or Hemp Plant; the lofty Nettle and the Creeper *(Maloo)* I particularly noticed. I used to make all my ropes from the *Maloo* for the Rope Suspension Bridges, before the iron ones were substituted, and found it exceedingly strong and lasting—far better than Europe ropes served out of the Magazines.

Care is taken to procure the proper species of Hemp. There are two kinds—one that throws out a number of branches, called by the Natives, jungle Bhang. The only use to which this is turned is in making the drug called Churus. It is unfit for the manufacture of Hemp, the proper kind of Hemp plant for cultivation grows to the height of about 8 feet, and throws out no branches except near the head. The seed of this is eaten by the Hill people, and when compressed an oil is obtained which they say is slightly intoxicating.

The seed is sown in the Hills about the middle of May, and when the Plants spring up they are thinned, leaving spaces of 4 or 5 inches apart. The ground is previously prepared and kept clear of long grass when the plant is growing up. I have observed that on the northern sides of the Hills it flourishes best, and in a soil rich from the decomposition of vegetable matter. The plant ripens about the month of September or beginning of October. It is then cut down and dried in the sun and afterwards steeped in a pond or stream for 8 days, the fibre is now stripped off from the thick end of the stock, and when put together in small parcels is beaten a little with a piece of wood or *tappee* and then made up into twists like *yarns* of Cotton. There is another plant that grows in the interior of the Hills from which stronger ropes even than the Hemp are said to be made. I allude to the large Nettle Plant. I have seen this growing to the height of 14 and 15 feet. The Hill people in preparing ropes from this plant, steep it for three days *only*, and then strip off the fibre; this is done in a contrary method to the Hemp stripping, i. e. the top of the Nettle is broken off, and the fibre pulled down from the thin end. It may not be out of place to mention here, that strong Ropes are made from a creeper called in the Hills *Maloo*. It grows in the valleys; when rope Suspension Bridges in Kumaon were in use, I introduced the Maloo Rope and found it much stronger than the Hemp Ropes supplied from the Magazines.

(Sd.) E. Swetenham, *Major, Engineers.*

Meerut, the 30*th April,* 1840.

ART. XIII.—*On Manilla Hemp and its superiority as cordage in India over the Hemp rope of Europe. By the Rt. Hon'ble Stewart Mackenzie, Govr. of Ceylon, with particulars regarding the botanical history of the plant by Dr. Wallich.*

[Read at the Meeting of the Society on the 10th June, 1840.]

I have much pleasure in sending you, on purpose of your kindly laying them before the Agricultural Society, at the meeting next week, on behalf of the Governor of Ceylon, the accompanying highly interesting notes of Joseph Higgs, Esq., Master Attendant at Trincomalie, on the subject of Manilla Hemp or Flax, together with a sample of the rope made therefrom.

Mr. Stewart Mackenzie says in his letter of the 13th ultimo which forwarded the above,—" I think the communication I now send you from the Master Attendant at Trincomalie, will prove very interesting to you, and to all who take any pleasure in these subjects, which must ultimately tend to the improvement of India, if prosecuted wisely and patiently. A specimen of the cordage from this (Manilla) Flax accompanies my letter."

I am very happy to add some extracts relating to the above-mentioned most important article, and to the plant yielding it at Manilla, taken from the 1st volume of Annals of Botany of König and Sims. They contain matter of very great interest. I wish I could have given a translation also from Father Manuel Blanco's " Flora de Filipinas ;" but I am utterly ignorant of Spanish. You have the work in the Society's library; and I am sure Mr. Piddington will kindly take the trouble of translating the article relating to our Fibre. It is headed "Musa de los Trogloditas de telares," p. 247 to p. 250, and contains probably much valuable information*.

Yours sincerely,
N. WALLICH.

Botanic Garden, 8th May, 1840.

Extract of a letter from Joseph Higgs, Esq. Master Attendant of Trincomalie, to His Excellency the Governor, dated Trincomalie. April 7, 1840.

"I had to make some inquiries respecting the price and weight of the Rope you allude to, which is the manufacture of *Manilla* not Havana. Shortly after the arrival of the Melville in this country, in 1832, Sir John Gore procured rather a large supply of the different sizes for the squadron from 7 inches to 1 inch. In that ship we made extensive use of it, reeving it on one side of the ship, against Europe rope on the opposite side, and it is from a very close observation of its merits, that I have formed the opinion of its being very superior to Europe rope in this country, particularly if the latter has been long in store here. It is to be regretted that more care is not bestowed in laying up the rope at Manilla, particularly the small sizes. The foregoing remarks apply only to the rope as running rigging; of its qualities for standing rigging I have had no experience, but remember

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* This desideratum, through the kindness of Mr. Piddington has been accomplished, and the translation from Father Blanco's volume will be found further on.—*Secretary.*

Captain Neish, one of the oldest Captains in the Bombay China Trade, in the command of the Fort William, telling me he was in the habit of bringing the large Rope from Manilla, laying it up afresh at Bombay, introducing tar to the yarns, and then it became excellent rope for shrouds.

"You will perceive by the annexed prices and weights, how very much cheaper and lighter it is than Europe rope, but I should mention that the Manilla rope has hitherto been brought to Trincomalie in H.M. ships, and no expense of freight incurred, whereas the Europe cordage is brought out in freight ships.

"Having a small quantity of the Manilla rope for the use of my boats, I venture to send a piece, thinking you would like to have an opportunity of proving the strength of its fibre, and I have no doubt you will come to the conclusion, that if more care was bestowed in equalising the yarns, and laying them up, the Manilla rope would be in a high degree superior to Europe rope in this country."

The price of Europe rope at the Naval Yard, Trincomalie, £2-7-3 per cwt.

The price of Manilla rope, 1-12-0

The Manilla rope is about 1-5th lighter than Europe rope.

A charge of 5 per cent. is added to the price of all supplies to Government, and 20 per cent. for supplies to other parties.

Extracts of two Papers concerning Manilla Flax or Hemp, and the plant yielding it. From König and Sim's Annals of Botany, vol. 1.

Account of a new species of Plantain, called Abaca, from the Spanish* of Don Luis Nee, (page 200.)

Abacà† is a name which the natives of the Philippine islands apply both to the vegetable fibres of which they make their cordage, and the plant that yields them. This is a species of plantain tree, the same which is called by Rumpf‡ Musa sylvestris, and in the Malay language Pissang Utan. It is found wild on the Philippine and Mendanao Isles, and is also most carefully cultivated, on account of the singular advantages which the inhabitants have learned to derive from it. Extensive plantations of it are to be met with on the island of Luzon, in the provinces of Albay, Laguna, and Camarines, but particularly in the vicinity of mount Mayong§, the base of which is about fifteen leagues in circumference. The soil of this extensive

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[*] Anales de Ciencias Naturales, vol. iv. p. 123.

[†] The natives distinguish several varieties of the Abacà :—

1. Abacà brava (the wild A.) called Agotaì by the Bicoles.
2. Mountain Abacà, the fibres of which only serve for making ropes that are called Agotàg and Amoquid in the Bicol language.
3. The Sagìg of the Bisayas.
4. The Laquìs of the Bisayas, by whom the fibres of the original Abacà are called Lanót.

[‡] Herbar. Amboin, vol. v. p. 139.

[§] The Bishop of New Caceres, Don Domingo Collantes, has favoured me with the description of the volcano in mount Mayong, in the province of Albay, as also with that of mount Isarog, in the province of Camarines.

tract, and that in the neighbourhood of another considerable mountain, called Isarog, is very well adapted to the cultivation of the Abacà, which thrives only in moist, shady, and fertile ground. In such situations thickets are formed by their trunks and young suckers, which last are sheltered from the intense heat of the sun by the beautiful and wide-spreading foliage with which the full-grown trees are crowned. The stems issue from a sort of tuber furnished with fibres, and grow in less than eighteen months to the height of seven feet, their thickness being that of a man's thigh. They contain a column of white and delicate pith, very like a white wax, of the thickness of a man's arm, and covered with several coats of fibrous membranes, the remains of former leaves. The leaves forming the crown of the tree are from ten to twelve in number, of which the outer ones spread horizontally, while those in the centre are divergently erect. They are five feet or more in length, one and a half broad, and supported by a stalk about a foot in length, which is prolonged on the under surface of the leaves, into a thick longitudinal rib, with which many small ramifications communicate. When this herbaceous plant (for such notwithstanding its size, it really is) has attained its greatest state of perfection, which it acquires in less than two years; a thick peduncle issues from the centre of the leaves, covered with partial, concave, ovate, acute spathes, which are developed in proportion to the growth of the peduncle. When they have acquired the length of three or four feet, the flowers appear, from nine to fourteen in each spathe, and are followed by green hard fruit, one and a half or two inches long, disagreeable to the taste, and applied to no use whatever.

When the fruit is ripe, the stem perishes as in other herbaceous plants, but a progeny survives in the suckers, which by this time have made their appearance. As the old trunks are not proper for use, the natives usually cut them down when a year and a half old, at which age this may be done with advantage. The stems being cut off near the roots and at the upper extremity a little below the leaves, are slit open longitudinally in order to separate the medullary substance from the fibrous strata, of which the outer are harder and stronger, forming the bandalà used in the fabrication of cordage; the inner consist of finer fibres and yield the lupis, used for weaving the nipís, and other more delicate fabrics, and the intermediate layers are converted into what is called tupoz, of which the guinarras are made.*

All these layers of fibres are saturated with a thickish fluid; to clear them from which they are cut into shreds two or three inches wide, and dressed like Flax in a sort of heckle or long piece of wood, furnished with three narrow knives, which being held in the right hand, the shreds are managed with the left, and thus reduced into fibres, and are by this process cleared from the fluid with which they were impregnated. In this state they are dried in the sun, picked and applied to different uses according to their different qualities. Those intended for cordage, &c., undergo no further process; but the others are rendered more soft and pliable by beating them with a wooden mallet; they are then fastened to each other by means of almost invisible knots, wound into balls, and committed to the loom.

The guinarras are four yards (varas) long, half a yard wide, and differ in fineness and value. The coarsest sell for the eighth part of a Spanish dollar; but others are so superior in quality as to bring five dollars: a shirt or shift made of this fine sort may be inclosed in the hollow of the hand.

The stuffs when woven are soaked in warm water for twenty-four hours, after which they are washed in cold clear water, then put, for the same space of time, in rice-water, and lastly washed as at first, by which means they acquire lustre, softness, and a white colour; which last, however, the natives do not understand how to preserve, for by dint of time and frequent washing the cloth becomes of a reddish hue.

The cultivators of the Abacà bind up the fibres as the Spanish peasants do hemp. Each of the bundles generally weighs one arroba: if they are bandalà they sell at the rate of the fourth part of a dollar a piece; the bunches of tupoz at three-eighths, and those of lupis at five-eighths each. These bundles are brought to market and sold to the women who manufacture them. I had an opportunity of seeing the looms of Nabua, where I was told that a woman cannot weave more than one piece of stuff in seven days. Those of the coarsest sort, called tinagsad, sell at the rate of one-fifth of a dollar the piece; they are four yards (varas) long, and made use of by the women as garments during the sowing-season. Others of rather superior quality, called hondoy, are likewise used for garments, and are sold for the fourth part of a dollar when plain;

the dyed ones are somewhat dearer. The sort called mabas, requiring more labour to be worked in stripes, is still more expensive. Two other sorts of superior quality are binacól and piring-piting, the latter of which sells for a dollar. Other stuffs of fine colours and exquisite quality, called cambayes, I saw manufactured at New Caceres, that are made use of by very rich ladies for shifts; in these cotton and silk are mixed in certain proportions with the Abacà.

They manufacture several patterns of the Abacà different in design and colour, according to the different uses for which they are destined, such as for dresses, shirts, curtains, table-cloths, sofas, &c. The abundance is so considerable, that, as I am credibly informed, the villages Cagsavá, Camalig, Guinapatan, and Ligáo furnish yearly 1500 arrobas each. In the district of Camarines they manufacture 1200 arrobas of cordage annually, and nearly the like quantity in the district of Albay, all which the king receives for one dollar and a half the arroba. With these the natives pay their tribute, parish due, &c.; they clothe themselves, and purchase necessaries of life.

In the manufactories of New Caceres, an astonishing quantity of cordage is produced, which they used to convey down the river as far as Sangai, and from thence by land to the store-house at Pasacao. The latter stage which is of three leagues, was formerly very tedious; but now, as the magistrate Don Manuel Lecaros has caused a very fine and convenient road to be made for carriages, it is not attended with any trouble.

It is a matter of surprise, that neither Linnæus nor subsequent botanists, have mentioned a plant which is so very well known and used in the Philippine Islands, though Rumpf, in the "Herbarium Amboinense," gives some account of it: he mentions its fruit as being very small, hard, and useless, and says that at Mindanao they are skilled in manufacturing ropes of the outer, and clothes of the inner fibres of its trunk. This author gives to one tree the name of silvestris, from a supposition that it is neither cultivated at Mindanao or Luzon; but as the fact is quite otherwise, at least at the present time, I thought it proper to alter the name, and to call this species of plantain Musa textilis, especially as it is the only one of which the fibres are converted into such exquisite articles of manufacture.

Though thousands of the true Abacà have been examined by me, yet I never succeeded in discovering it in flower. I have been more successful, however, in this respect, with the other species and varieties of Musa, which are distinguishable from each other by the extension of their leaves, by the different colour of the spathes and the size and taste of the fruit. There are at least twenty-seven different sorts on the isle of Luzon only, which I have examined; but as I do not here intend to determine how many of them may be real species, I shall be contented with communicating what my long continued observations have taught me with respect to the flower in general.

Some further account of the Abacà from the French MS. transmitted to David Lance, Esq. from Manilla, and communicated by the Right Honorable Sir Joseph Banks, (p. 551.)

In addition to the paper on the Abacà (Musa textilis) in our last number (vide p. 200), we have been favoured with the following communication by the President of the Royal Society.

To prepare the thread of the Abacà, which is a wild plantain, it is necessary to observe the period at which the plant is of a proper growth and age to cut, which is known by its beginning to push out small leaves from the centre, or by its ceasing to shoot altogether, which is a sign that the fructification is going to appear; before which the plant should be cut down, otherwise the fibres will be weak and brittle. The Abacà comes to perfection in about two or three years, though it may be cut earlier; but then the quantity of threads will be smaller, and these will neither be so long nor have the same strength as when the plant has acquired its proper growth. To add to its vigour, nothing is necessary but to remove all the young shoots, which may be planted elsewhere; but if these are not removed they will be fit to cut a year after the parent stem.

After the plant has been cut down, all the leaves that envelope the stem to the heart are to be taken off, and the inner membrane peeled off; the leaf is then to be divided lengthwise into three, four, or five breadths: if it be wished to make it pass easier under the scraper, or if it be preferred to scrape the leaf whole, in order the easier to hold it from slipping through the hand, the lower end should be first scraped for a sufficient length to allow the ends of the threads to be tied round a piece of stick, which may serve as a handle to assist in drawing the leaf through the scraper. After the leaves are separated from the trunk, they may be left for two or three days in the shade before they are scraped, and are the better for being so left one day.

The operation of separating the threads from the leaf consists in passing it several times under the scraper, which ought to be rather heavy, till all the pulp with which the threads are surrounded is squeezed out. This is known to be the case when upon shaking the bundle the threads easily separate from one another. These are then fit to be made into cordage and cables, being previously dried in the shade to preserve the cordage the better, especially if the threads have been moistened with fresh water; which is not good for this cordage.

The scraper is a very rude machine which might easily be improved. Two stakes are fixed firmly in the ground, and to the top of these is adjusted a board; upon this a log of wood is fixed at one end by a peg while the other end rests in a fork; to this end is attached a cord which passes through a pulley, and is then fastened to the end of a piece of bamboo; by treading on which the operator lifts up the log or lets it down at his pleasure. About the middle of the log is fixed a blade of iron, serving for the scraper which rises very little above the wood lest it should cut the fibres.

Remarks on the Abacà or Manila Hemp, Musa Trogloditarum Textoria. Translated from the Flora de las Filipinas of Father Manuel Blanco, by H. Piddington.

This plantain, called Abacà, I take to be a variety of the preceding one (Musa Trogloditarum.) It is highly useful and is cultivated with care in the province of Camarines and other parts. At the first sight it does not differ from the others. The fruit is very small, for I have seen some not more than two inches long. The seeds being perfectly ripe. The uses of this plantain are immense. From it are manufactured ropes, cables, and cloth of extreme fineness.

For this the trunk is cut down at the foot, and the head and leaves are lopped off when it is on the point of bearing fruit. The petioles are stripped off one by one, and an incision is made across inside with a knife to take off the bark which covers them interiorly. When the article is deprived of its interior bark it is then cut into strips of about two fingers in breadth, which are placed one by one beneath the cutting edge of a knife fixed in a long bamboo, which acts as a spring, the longer end of it being fixed in the ground. The strip of Abacà being placed beneath the knife, so that the exterior bark is upwards, it is drawn through strongly by one end. This is repeated once or twice, and the fibres then appear clearly; but in this way half the Abacà is spoiled. It has yet to be passed through a sort of saw which operates like the heckle used in Europe for Flax: I have not seen this last operation performed, but I have the first. The fibres are thus made straight, but some are finer than others, and on this account the women take care to separate them into various classes before weaving. This they do with great dexterity even in the dark.

If the Abacà is to be used in making cloth, it is first made up into a tight bale as big as a child's head. This is put into a mortar in which the rice is pounded, and then it is well broken with the pestle which is of wood. This operation renders the Abacà more flexible and less liable to break.

After this the threads are knotted end to end, which is done by the women and girls. It is woven like cotton cloth, but if the Abacà is very fine the women shut themselves up within a sort of tent because the wind easily breaks the threads.

When the cloth is made it is put for a day and night into water with a little shell lime. It is then washed and stretched.

Though the Abacà is tolerably strong, it is very inferior to Hemp and Flax both as to strength, appearance and feel.

The Abacà thrives well in the province of Batangas and in other parts, but it is not so good there as in Camarines; and this last even is held as inferior to that of Panay and Marimduyne, though there are different opinions on this subject. The fruit is eaten, and the water which collects in a hole made in the stump is used medicinally. The English author, Davi-per, is mistaken when he says that the Abacà is only to be found in Mindanao. The Abacà is easily dyed blue and scarlet. To dye it blue they use the leaves of a shrub or creeper, which is called in Camarines

Payanguit and *Aringuit* according to the account given to the Econominal Society of Manila by that curious and diligent observer, Father Jose de Areta of the Franciscan Order, who first made it known to the Europeans in the Phillippines. The leaves of this plant (which is the Marodinia *tinctoria: Trans.*) gives an abundant blue colour.

To dye the Abacà scarlet, I am informed that in Camarines the bark of the root of the Morinda (Morinda *tinctoria* most probably), is boiled with a little lime or alum until the desired colour is obtained, and the cloth is then dyed. But it is better to dye it as cotton thread is dyed; that is, with lye and oil of Ajonjoli, *(Sesamum Indicum : Trs.)*

ART. XIV.—*Otaheite Cane culture in the District of Tipperah.*

Communicated by E. Foaker Esq. Civil Surgeon.

[Read at the Meeting of the Society held on the 10th June, 1840.]

The sugar cane sent here last year from Calcutta, I regret to say that although 1600 canes were dispatched they arrived in such a bad state that not more than 300 were of any use. Of these a portion were planted in a village inland, which was too low, and the rains being very heavy, failure was the consequence. The portion retained and planted under my superintendence in the Botanical Garden yielded a supply of plants for 1210 holes, which being planted 5 feet apart, and being taken great care of became in December and January very fine, each hole yielding from 10 to 18 canes of from 6 to 9 inches in circumference. In order to show the public what kind of cane and how profitable it was, and to remove the prejudice which existed in the mind of the natives against the introduction of a new article, some cane was sold at 1½ anna each, and of some of it I manufactured some brown Muscovado sugar in the native manner with the rudest utensils. Others had tried to make sugar from native cane juice, but failed. Of the best cane the top being removed, seven gave three gallons of juice; of the worst it took from ten to fourteen to yield the same quantity: 24 gallons of juice gave 21 lbs. of sugar and 12 of molasses. In the latter part of the season I cut the canes into pieces for planting, and put them into the earth, and when ready to transplant distributed them gratis to whoever required them. All those who had previously purchased canes to eat carefully kept the tops for planting, and the demand for the garden plants greatly exceeded our means of supply. Altogether I have distributed upwards of 25,000 plants to about 100 individuals, and I have doubled the cultivation under my own care. The cultivation is going on so well that I have great hopes this cane will expel all other kinds from this district in two or three years. After all the best canes had been disposed of, and the manufacture had stopped, I weighed one cane which was very much inferior to a great many previously cut; it weighed lbs. 7.2 oz.; and I am quite certain the best canes must have been at least 10 lbs. the holes were made two feet wide and two deep, and were nearly filled with manure, to which and regular irrigation, and hoeing at proper times, perhaps the luxuriency of the cane may be attributed Should this report of the cane be of any use, you are at liberty to give the substance of it at any of the meetings.

Comilla, May 5th, 1840.

Art. XV.—*Corn and Pasture Grasses of India. By Professor Royle, F. R. S.*

[Read at the Meeting held on the 8th July.]

(Professor Royle being desirous of drawing "the attention of Members particularly to the importance of Corn and Pasture Grasses," which has been treated by him, was induced to forward to the Society, overland, the loose sheets which had been prepared by him for the tenth number of his "Illustrations of the Himalaya Botany.")

On the Corn and Pasture Grasses of India.

Grasses, forming the most natural of orders, are the most extensively diffused, and at the same time the most useful of vegetables; a few species affording the corn which forms a great portion of the daily sustenance of millions of human beings; while others afford pasture for cattle, which are themselves to form the remainder of the food of many, especially of northern nations. They are extremely numerous, nearly two thousand species being at present known, and thus forming nearly one-twentieth of the plants described in systematic works; but if the number of individuals be considered, the portion is immensely greater.

They are found in all parts of the world, both on land and in water, in dry and in moist situations, in hot and cold, tropical and temperate climates, though different tribes, genera and species, inhabit these several situations. Those in tropical situations such as *Bamboo* and *Saccharum*, with broad foliage, often attain a great height, the former often fifty or sixty feet, and the latter tall enough to conceal herds of elephants, while the verdant turf of northern regions is formed of short and compact grassy tufts. As they are abundant and large in foliage in tropical situations, so do the species which extend along the foot of the Himalayas form a grass jungle sufficiently high to conceal the elephant and rhinoceros; while in ascending, we find many of the same genera and species which are met with in proceeding from the equator to the poles. These have all been examined and named by Professor Nees von Esenbeck, to whom I am indebted for MS. descriptions of the new genera and species.

The grasses, forming the greatest portion of the pasture for horses, cattle and sheep, in most parts of the world, at the same time that they yield grain, which forms three-fourths of the food of man, are necessarily the most important class of plants in an economical and political point of view. Their culture forms the greater portion of the agriculture of all countries, and has in Europe been studied to an extent, and with a care, to which the agriculture of the East is a stranger; for besides the preparation of the soil, and the addition of the composts and manures, the most minute attention has been paid, by many scientific farmers, to every point of the culture of each particular cereal grass, so that their cultivation has been of late years greatly improved, their utmost productiveness very carefully ascertained, and new rules obtained, for the use of the merely practical farmer.

These points embrace a consideration of the species, and varieties, their native country, soil, manure, climate, and season of cultivation, with the preparation of the seed, its quantity, and the mode of sowing, as well as the after-culture, and the harvesting, including the mode of reaping, the threshing, ascertaining the produce, as well as the proportion of flour; besides considering the various uses to which the grain, the flour, chaff, and straw, may be applied. Few of these points have been accurately ascertained with respect to any of the corn or pasture-grasses cultivated in India, though few subjects offer greater inducements for close inquiry, and careful experiment.

The many Agricultural Societies now established in different parts of India will find among them very important subjects for experimental investigation, as the slighest enlargement in the size of a grain, or the least increase in the productiveness of an ear of corn, when extended into the agriculture of a country, will so infinitely increase its resources and revenues.

The grains cultivated in Great Britain are chiefly different species, and varieties, of Wheat, Rye, Barley, Oats, and occasionally Maize and Canary Corn *(Phalaris canariensis)*; to these have been added, in the S. of Europe; Rice, Maize, and the different kinds of Millet, which have been chiefly introduced from India, as *Panicum miliaceum*, *Setaria italica*, and *Sorghum* *vulgare*; *Setaria germanica*, German millet, and *Digitaria Sanguinalis*, or Polish millet. The season of cultivation, in Europe, is confined to the summer, with the exception of wheat, which is sown in autumn; but in India, where the cultivation of wheat and barley forms the agriculture of the country, as much as rice, sugar-cane, and millet, the seasons of cultivation are very different. Wheat, barley, and millet (*Panicum miliaceum*) being cultivated in the months which correspond to the winter of European climates; that is, from October to March; while rice, maize, *joar* and *bajra*, and the other smaller grains, are cultivated in the rainy season; that is, from the middle of June to the middle and end of September.

The grains which are cultivated in N. India are first, different varieties of wheat, *Triticum vulgare*, Nees, which are red and white, *lal* and *mukhmee*, awned and awnless, as, first, *lal-gehoon*, var., *autumnale*, or *moondla-gehoon*, *fusca*, or *peela-gehoon*, and var., *velutina*, *kunnee-gehoon*; many other varieties are probably known to the zumeendars, but these are very distinct from each other, and may be clearly described. Wheat having been one of the earliest cultivated grains, is most probably of Asiatic origin, as Asia was no doubt the earliest civilized, as well as the first peopled country. It is known to the Arabs under the name of *hinteh*; to the Persians as *gundoom*; Hindee, *gehoon* and *kunuk*. The species of barley cultivated in the plains of India and known by the Hindee and Persian name *juo*, Arabic *shaeer*, is *Hordeum hexastichon*.

As both wheat and barley are cultivated in the plains of India in the winter months, where none of the species of these genera are indigenous, it is probable that both have been introduced into India from the north, that is, from the Persian, or perhaps from the Tartarian region, where these and other species of barley, are most successfully and abundantly cultivated. *Panicum miliaceum* or common millet, is the only small grain cultivated at this season of the year. It is called *cheenā*, by the natives of India; Arab. *dukhun;* Pers. *urzun,* and is, like the preceding, common to the cultivation of Europe, and of India. Oats, *Avena sativa,* are also now cultivated in the same season with wheat, and barley, by some European gentlemen, by whom the grain was introduced on account of their horses. *Avena sterilis* is found, as well as *A. fatua,* in fields of wheat and barley in the plains of North-western India, flowering in March.

Rice is of course the grain most extensively cultivated in India, not only in the southern parts, but also in the nothern provinces, as well as in the Himalayas in the rainy season. Numerous varieties are known to, and named by, the zemeendars or farmers of India, and some of these yield the finest rice, as that cultivated in Pilibeet, though only the inferior kinds are imported into this country; whence it has been inferred that all Indian rice is inferior to the American, notwithstanding that it was first introduced into the latter country from India.

It is known to the natives of India by the name *chanwul,* while the plant is called *dhan;* the Persian name of rice is *birunj,* and the Arabic *arux,* whence probably *oryza,* and the English rice. The different kinds of *Sorghum,* commonly called *joar* or *jooar,* and in some works Great, or Indian Millet, constitute an important branch of Indian culture; this is known to the Persians by the name of *jawurs-hindee;* to the Arabs by the name *surut,* and also to various tribes by that of *durra.* The species commonly grown are *Sorghum vulgare* and *S. bicolor (kala-jooar),* referred by Dr. Roxburgh to *Andropogon,* and which he describes as being cultivated in a rather elevated, good soil; (seed-time October, and harvest-time January,) and the produce as being often upwards of an hundred-fold.

Dr. Roxburgh observes, "It is probable that through the whole of Southern Asia, as many of the inhabitants live on the various kinds of dry, or small grain, as upon rice, and they are reckoned fully as wholesome as that is." *S. cernuum* is a distinct species; a variety of which he describes as being cultivated by the inhabitants of the Munnipore district, and as forming the staff of life of those mountaineers, because one of the few articles of their agriculture. *S. saccharatum* is another species described by him as much cultivated over various parts of India, during the rainy and cold seasons, upon land which is too high for rice. The straw of all is much valued as fodder for cattle, being cut up into small pieces, and called *kurbee.*

Zea mays, Maize or Indian corn, a native of S. America, and so extensively cultivated both in Peru and Mexico, has been introduced, not only into the United States of America, but also into Africa and Asia, and even into the southern parts of Europe;

its cultivation has been attempted in England, chiefly by the influence of the late Mr. Cobbett. It is calculated that next to rice, it is the grain which supplies food to the greatest number of the human race, and that it is capable of cultivation when the summer temperature equals or exceeds that common to latitude 45°, and even to 48°.

This extensive cultivation is remarkable in a plant, originally a native of S. America, and may be ascribed partly to its probably having been a mountain plant of those latitudes, and also to its requiring a less degree of moisture than rice, as well as to some of its varieties coming to maturity in so short a space of time as forty days. It has been introduced into India, and is cultivated both in the plains and in the Himalayas, but not so extensively as its productiveness and value as a grain would warrant; nor are the modes of cultivation adapted to insure the greatest degree of productiveness, either with respect to the quantity of grain or of straw.

It is more extensively employed in India with the seeds roasted while still green, than as a grain to be converted into flour; but if cultivated for this purpose, according to the most approved course of agriculture, it would probably be found more productive than some of the grains now cultivated in India.

These consist of *Paspalum scrobiculatum (koda)*, and its varieties, which are much cultivated, and form a great portion of the diet of many of the natives; as also *P. miliare*, which Dr. Roxburgh describes as being extensively cultivated, and as forming the diet of the natives in the Peninsula. *P. frumentaceum*, which is their *sanwuk*, and its varieties, called *mundoo-sanwuk* and *saonkee*, yielding between fifty and sixty-fold, and *Pennisetum (Setaria) italica*, commonly called Italian millet, yielding the former proportion. It is the *kungne* of the natives of India, Arab. *sumak*. *Penicillaria spicata*, Hindee *bajra*, Arab. *jawurus*, which forms much of the diet of the poorer natives. *Eleusine corocana (mundooa)*, with *E. stricta* of Roxburgh, appear, however, to be the most prolific of the cultivated grasses, as the ordinary product is 120-fold; and he describes one variety as yielding even 500-fold in the Rajamundry Circars. One plant of *E. stricta* he particularly describes as having borne not less than 81,000 seeds. Besides these cultivated species, the grains of others growing in a wild state are collected and form articles of diet with the poorer classes of the natives of India, as of *Panicum floridum (burtee)*, *P. Helopus (kooree)*, *P. (Echinochloa) hispidulum (dhand)*.

To the cultivated kinds some others might be easily added, if it were desirable, as *Setaria germanica*, *Digitaria sanguinalis*, *Festuca aquatica*, *Glyceria fluitans*, &c. suited either to the plains or mountains of India.

The cultivation of Pasture-grasses having only so recently formed a part of English agriculture, it cannot be expected that much attention should have been paid to the subject of Hay and Pasture-grasses in India, though some districts, as that of Hurriana*, like the natural pastures and meadows of the British isles, are celebrated for their pastures, and their herds of cattle. The subject is one of the greatest importance, not only as affording pasture for horses and agricultural cattle, but also for improved breeds of sheep which India is likely to produce, and to export their wool.

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* As the district of Hurriana is celebrated for its pasture-grasses, I requested my friend, Col. Colvin, of the Bengal Engineers, to make a collection of the grasses in the neighbourhood of Hansi, which he was good enough to do, and sent me a small collection of very fine

The plains of India being subject to great heat, with drought at one season, and heavy rains at another, cannot be expected to present any pasture-grounds resembling those of the best parts of Europe; but the temperature of the cold weather months, especially in the northern provinces, being such as to be most favourable for the cultivation of the same cereal grasses as in Europe, it is not surprising that good grass is produced there, and that many European gentlemen prepare very excellent hay. Their rapid growth, great height, and subsequent dryness, render many of the Indian grasses unfit for pasture at the end of the year. This the inhabitants of the tracts at the base of the Himalayas, as well as those within these mountains remedy, by yearly burning down the old and dry grass, so as to allow the young blades, which immediately sprout up, to afford fodder for their cattle.

But Europeans in India infinitely prefer, or indeed only give their horses, the creeping stems and leaves, scraped off the ground by the grass-cutter, of that grass,

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specimens, but which, I did not find, differ much in kind from those in the Doab. They belonged to the genera *Panicum*, *Pennisetum*, *Cenchrus*, *Chætaria*, *Vilfa*, *Dactyloctenium*, *Chloris*, *Eleusine*, *Achrachne*, *Poa*, several species of *Eragrostis*, and *Andropogon*.

which is known by the name of *doob* or *doorba*, and which flowers, nearly all the year round, and is, fortunately, by far the most common in every part of India. In Northern India it is a common practice to form lawns and pastures of moderate extent, by planting pieces of the creeping stems of this grass, which yields excellent hay in what is the spring of the year in Europe.

Dr. Roxburgh, writing in the south of India, also describes it as the most valuable kind, as forming three-fourths of the food of their horses and cows. By the Brahmins of the coast it is held sacred to Ganesha, (the Jonas of the Ancients,) under the name of *Doorwall;* it has sometimes been introduced into England, but it is a well-known British species, though not common, being the *Panicum* or *Cynodon Dactylon* of botanists. Cattle are also fed on chopped straw (*bhoosa)*, as well as on the stalk of the *joar (Sorghum vulgare)*, cut into small pieces, and then called *kurbee*, of this all kinds are remarkably fond. They are also fond of the straw of many other of the cultivated *Graminea*, as of *Paspalum scrobiculatum*, and *Kora*, *Penicillaria spicata*, *Panicum italicum*, *frumentaceum*, *miliare*, and *Eleusine ægyptiaca*. Buffaloes, also, are fed on *kans*, or *Imperata (Saccharum) spontanea*, and its varieties, which are stacked for this purpose.

India is not, however, destitute of pasture-grasses, but they belong to genera and tribes different from those of Europe, as to *Panicum*, *Eragrostis*, *Saccharum*, *Rottboellia*, &c. Besides the above-mentioned, cattle are also fond of such grasses as *Panicum colonum*, *setigerum*, *repens*, *hirsutum*, and *miliare; Digitaria* *ciliaris*, *Rottboellia glabra*, and *Andropogon Martini**, a native of the high lands of Ballaghaut, whence the seeds were brought by the late General Martin, and taken to Lucknow, as well as transmitted to the Botanic Garden at Calcutta. He was induced to take particular notice of this long grass, in consequence of observing how voraciously fond the cattle were of it, notwithstanding its having so strong an aromatic and pungent taste, that not only the flesh of the animals, but also the milk and butter, have a very strong scent of it.

Dr. Malcolmson, to whom I am indebted for specimens of this grass, which he obtained in the Deccan, where it is universally spread over the trap districts, though seldom seen on the ordinary granite of that tract, informs me, that he has by it traced green-stone dikes for great distances across granite soils—the luxuriant growth, of *A. Martini*, contrasting remarkably with the thin and low *A. Polystachyus*, of the granite. He also informs me, that the Patans and succeeding Mahomedan Governments valued the pasture of some of the sand-stone hills south of the Kistnah river, where the lemon-grass, (an *Andropogon Nardoides?*) is found, so highly as to reserve it for their own cavalry, or the right to cut and sell it, was rented as a monopoly to the highest bidders; but this was abolished about twenty-five years ago.

The pasture of the Nalla Malla Hills, in sight of these, is considered bad, though more luxuriant, growing on a calcareous rock passing into a clay slate. Dr. Malcolmson, with these grasses, also collected specimens of the Nuth, or Nuthoo, grass of Bellary, and the Ceded Districts, of which an account has been given by Dr. Wight in the Madras Literary and Scientific Journal; it is remarkable for the great difficulty of eradicating it when once it has taken possession of the soil. Dr. W. has named this grass *Ischæmum pilosum,* but if so widely diffused it can hardly have escaped the notice of all previous botanists; especially as every government that has ruled in these districts has, from time immemorial, been paying large sums for its eradication. It is chiefly found in the "black cotton ground," and differs from nearly all the other herbaceous plants found there, by its widely-spreading, perennial roots, or underground stems, all the others having either fibrous annual roots, or very long tapering perennial ones, with the stem, even when procumbent, generally annual, and altogether above ground. In its creeping habit it resembles *Triticum repens,* in Europe, and some other plants found in sandy soils, which form a valuable provision for binding the loose materials among which they grow.

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* This plant appears to me, from the specimens, to be only a variety of *Andropogon Nardoides*, v. infra.

Though rewards have been given and revenue remitted, Dr. Wight is of opinion, that the prevalence of this grass is far from being an unmixed evil, as cattle eat it, and large quantities are daily exposed for sale at Bellary, as food for them ; and if it could be raised on less valuable soil, it would probably be thought a useful enough plant: he further says that the necessity of granting remission may be doubted, as it may almost be considered as a boon, conferred on these districts by the hand of a bountiful Providence*.

The pastures of the various plains of India might probably be much, and at the same time easily improved, by the introduction of some of the pasture-grasses of Brazil, which are of a gigantic stature, and perfectly tender and delicate. Nees von Esenbeck, as quoted by Dr. Lindley, informs us that the *Coapim de Angola* of Brazil, *Panicum spectabile,* grows six or seven feet high; while other equally gigantic species constitute the field crops on the banks of the Amazons.

The base of the Himalayas, we have noticed, is clothed with a dense grass jungle, among which, species of *Saccharum*, and *Andropogon,* are the most conspicuous and the tallest, but when full grown, necessarily too coarse to serve either for pasture or for hay; they are, therefore, yearly burnt down, after which the young blade springs up, affording excellent pasture for herds of cattle.

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* From native information it appears that there are two kinds of *Nuth,* one called *Koondara,* in the *raguda,* or black soil; the other *Gurukor* (*Panicum dactylon,* Lin.) in the *mudub* or mixed soil. The former is styled *pudava* (ship), when the large plough, with twelve bullocks, is required to eradicate it. When in detached spots, it is styled *gumpa* (basket), and may be removed by *wudas,* and other labourers, with pick-axes. The charge for digging out *Nuth* is from one, to one and a half rupee, for a piece of ground eight yards long, two broad, and four and half deep. If the Nuth does not exceed one-tenth of the land, no cowle or remission is granted. If one-fourth, the assessment on the Nuth portion is remitted, but no cowle granted. From one quarter to one-half, besides the remission, a cowle is granted for clearing it. The remission granted on account of waste from Nuth in one village, in *Fusly* 1242, amounted to Rupees 163-7-2; *viz. Gumpa nuth,* Rupees 97-11; *Pudava nuth* 66-6-3.

As we ascend the mountains, tropical forms gradually disappear, and those of temperate regions take their place, while at certain elevations, where the cold of winter is severe, and the temperature of the rainy season equable and moist, at the same time moderately high, we find many species of grasses, of tropical genera, perfectly at home, in situations which are, in winter, covered with snow ; but as those elevations have their own peculiar species belonging to European genera, which are able to withstand the winter's cold, there is at all times abundant pasture in the neighbourhood of most of the Himalayan villages, and according to the season of the year the sheep and cattle are driven to different ranges and elevations. The sward upon these mountains is exactly like, though somewhat more luxuriant, than that met with in the mountains of Scotland, or of Wales ; and the sheep and the cattle fed on them have the fineness and flavour of those fed on grain in the plains of India.

The grasses in the Himalayas we have seen belong to such genera as *(Agrostis)* ; Fox-tail grass *(Alopecurus)* ; Cat's-tail, *(Phleum)* ; Meadow-grass, *(Poa)* ; Fescue, *Festuca* ; Cock's-foot *(Dactylis)*; Bent-grass, *(Agrostis)* ; Oat-grass, *(Avena)* ; *Bromus*, and others, which are equally characteristic of European meadows and pastures ; but it is still more important, that many of the *very species* which are accounted the best pasture-grasses in England, are among those found in the Himalayas ; as, for instance, Cock's-foot grass, *(Dactylis glomerata)*; Annual, narrow-leaved, and smooth-stalked meadow-grass, *Poa anrua, P. angustifolia,* and *P. pratensis*; Cat's-tail or Timothy-grass, *Phleum pratense*; Purple Fescue-grass, *(Festuca rubra)* which from its greater produce is considered preferable to the *F. ovina,* specially called Sheep's Fescue-grass.

Besides these, there are, as has been already shewn, a number of species, belonging to the same genera, and analogous in nature, some of which may even be superior to the best grasses of England, where they might be worthy of introduction; shewing, at all events, how easily any other grasses, as biennial rye-grass, might be successfully introduced, though this may not appear to be at all necessary where the natural pasture is already so good. But it would be of considerable importance to find some pasture-grasses suited to the plains of India, or the table-land of the Peninsula, and the Dukhun, and such a series as would afford pasture, in the different seasons of the year, as the cold, the hot, and the rainy; the first might be furnished, perhaps, from the north, and the second, probably from the south of Europe, while tropical countries are alone likely to furnish those fitted for the last.

The creeping-rooted, and stoloniferous kinds, grow readily in almost any soil. In Europe attention is paid to hay-grasses, both of temporary, and of permanent duration; also to those adapted for pasturage, and to these, as yielding early or late pasturage, as well as those suited to different kinds of soil. The subject has in England obtained great and deserved attention, but no where so conspicuously as in the experiments instituted on this subject by John, Duke of Bedford, at Woburn, and carried into execution there by Mr. Sinclair, and detailed in the work, entitled "Hortus Gramineus Woburnensis;" for a copy of which I was indebted, when in India, to the late venerable Dr. Carey: a very useful abstract of this work is given in Mr. Loudon's excellent Encyclopedia of Agriculture.

The grasses, though humble in appearance, and inconspicuous in inflorescence, are, as we have seen, among the most important of plants; they are among the first to grow upon new or barren soils, and thus moderating the extremes of heat and cold, serve to modify climate, at the same time they prevent land, which has long been in use, from becoming sterile, in consequence of the yearly additions which they make to the soil, of organized matter from their own decay. Their universal diffusion, and great similarity in nature, has rendered easy the colonization of distant lands by man, as well as the transport of herbivorous cattle from one part of the world to another.

No plants, therefore, are more worthy of continued and extended experiments in India, as few things can more effectually benefit society, or promote the best interests of the country, than increasing the productiveness of a cereal grain, or improving the culture of a pasture-grass, except it be introducing new kinds of each, suited to the different parts of the wide-spread territories, and diversified climates of that empire, knowing, as expressed in the terse language of Linnæus, that *Gramina, folia pecoribus et jumentis læta* *pascua, semina minora avibus, majora hominibus esculenta sunt.*

Closely allied to the Grasses as are the Sedges, it is remarkable that so few of them should be useful, as pasture grasses; none indeed, are mentioned among those in the "Hortus Gramineus Woburnensis," and they yield in Europe very indifferent fodder, though useful for bedding and litter; but *Scirpus cæspitosus* forms a great portion of the food of cattle and sheep in the Highlands of Scotland in March and till the end of May; and the several varieties of *S. maritimus*, found in different countries, are greedily eaten by cattle. As *Cyperaceæ* are much more abundant in India than in Europe; we have few pastures there free from them, and Dr. Roxburgh enumerates species of *Kyllingia, Courtoisia, Cyperus, Abildgaardia, Scirpus, Isolepis, Fuirena, Fimbristylis,* and *Trichelostylis,* as common in pasture grounds in India, though only a few, as *Cyperus dubius* and *hexastachyus,* are particularly specified as being eaten by cattle.

ART. XVI.—*Successful introduction of Baraset Rice into the District of Purneah.*

[Read at the Meeting on the 8th July.]

An interesting communication was read from Mr. Pratt on the result of experiments made by him some years ago (abont 1830) while an Indigo Planter in Purneah, with some paddy which had been sent to him by Mr. Hurry from the neighbourhood of Calcutta. Having retained a few seers for himself the residue was distributed to Planters, Zemindars, Mostajahs and others in various parts of the district of Purneah.

The result of the first trial (though made under disadvantages) was very satisfactory, having obtained from two cottahs [about 1440 square feet] (small measure) B. maunds 2-10 seers, [about one cwt. 74 lbs.] or at the rate of twenty-five maunds per beegah, [18 cwt. for one-third of an acre.] The next attempt made by Mr. Pratt was upon a large scale in a remote part of the district (Soojapore Zemindarry) which is almost exclusively confined to the cultivation of paddy, and although the want of rain was greatly felt at a particular period of the season, twenty beegahs produced an average of *twenty-two* maunds of paddy per beegah, which quantity far exceeded anything the Ryots had ever been accustomed to witness from their ordinary crops. Having pointed out to the Zemindars the advantages and importance of introducing this unusually productive and superior grain upon an extensive scale among their Ryots, Mr. Pratt left about 400 maunds for that purpose, and now that four years have elapsed since Mr. Pratt left, he understands that "the Belattee Dahn (so called by them) is cultivated to a very considerable extent."

Being fully aware of its superior value as an article of commerce in Great Britain, Mr. Pratt made several attempts to husk and clean it (so as to retain its proper color with the grain entire), but with the means then and at present available in the mofussil (the ordinary Dhenkee) the proportion of whole grain seldom exceeded one-third, (the remainder broken) thereby rendering it unfit for the Calcutta market.

With efficient machinery, under proper management, Mr. Pratt sees no reason why it should not equal the fine large-grained Carolina Rice, which in the European markets generally commands a much higher price than any of the best descriptions hitherto imported from Bengal?—but under any circumstances it is well worth the attention of Zemindars and Landholders from its very productive properties alone.

Art. XVII.—*Capabilities of Central India. The Goands of Omurkuntuk. By G. G. Spilsbury, Esq. Surgeon, Political Agency, Saugor and Nerbudda Territories.*

[Read at the Meeting held on the 8th July.]

Ramgurh is an extensive territory as far as quantity of land—but a lamentable deficiency of the genus Homo-Sapiens. A rajah lords it over the country and has some 1400 villages. This visit of the Commissioners to his country will perhaps be productive of good. Some of it consists of extensive bare plains, (by bare I mean free of trees,) seemingly excellent soil, abundance of water; in fact the greenness of the grass, so different to what you see elsewhere at the end of March, is evidence thereof. Thousands of cattle come up from the south to graze in those months. It is all trap and laterite. Population almost all Goands, who certainly are little removed from the next class Quadrumanæ. A great bar to Hindoos remaining long here is the firm belief of the powers of witchcraft wielded by these Hill tribes.

The Sal-trees yield the Ral—Banslochun is the dearest article—11 rupees for a seer—best. Second must be very inferior—4-8. Prices are all in Company's rupees, and the weight—80 tola to a seer. A lot of Tikhoor is sold and exported, chiefly they tell me for pooja purposes, made up like arrow-root*. Lakh, I should say, is in little demand, for as you will observe its price does not vary in the two seasons. I should think Sugar-cane would grow well. Irrigation is to be had to any extent.

Towards Omurkuntuk, it rains every three or four days; what induces this? The Mahadeo Hills are some 1500 feet higher and as thickly clothed, and it does not rain so there—the one is all sandstone and trap—here all capped with laterite. Is the difference of geological features sufficient to account for the difference? I shall be happy to hear this with the Statistical returns is in time for your report. I cannot get any answer from my Rewah friend, so you must go without the prices in that country.

Camp 20 miles West of Omurkuntuk,
27th March, 1840.

Traffic through the Nerbudda Valley and an Account of the Statistics of Produce for a period of three seasons. By George Green Spilsbury, Esq., Surgeon to the Political Agency.

Jubbulpoor, to which the statistics refer, is a large and flourishing town, situated about five miles from the banks of the Nerbudda. And indeed may be considered as almost the eastern extremity of that very fertile tract of country denominated the Valley of the Nerbudda, for from this to Omurkuntuk the source of this river, the country is little more than a series of wild, mountainous, jungly tracts, with small valleys intervening. The salt used is from Ajmere, and there is a very marked difference in the price of this article, in the dependent states and our own.

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* In Calcutta a quantity is sold for arrow-root.

The export of grain from this valley is great, and unless Berar and Ellichpoor have a scarcity the prices in the Hoshungabad districts are always lower. It is bordered on its north side by the Bhopal State, which exacts duty on grain in transit. Wheat and Gram are the staple produce of the valley. Cotton is extensively cultivated on the banks of all the rivers and nullahs North, and about which nodules of kunkur are spread over the land, and as a general rule I should say that the cultivation of this plant is not usual on the pure decomposed trap soil.

Jubbulpoor is a great mart for Cotton, so that from the end of March to June, the whole road from this to Mirzapoor is covered with hackeries and droves of Buffaloes and Bullocks. This splendid road from Tilwary Ghat on the Nerbudda (distant seven miles from this) has been completed at a great expense, but with exception of the Kuttra Ghatee, and a most useful pavement across the bed of the rocky Belun (some 500 feet long) I am disposed to think that it is an error having made such a road.

A road practicable nine months of the year, cutting ghats of nullahs to an inclined plane, and after every rains smoothing the *ooncha neechees* would have been done at a comparatively trifling outlay, and then large sums would have been available in making the road to Oamraotee, and the Dukhun. Last year we travelled over such a road from Jogahie to Dunoh on Sir C. Metcalfe's plan of 80 rupees a mile.

The road from this (Jubbulpoor) to Saugor has also been so done—and from this to Hoshungabad all that is required for transit of goods, &c. with facility is the making of a road at the nullahs. The return which is received from Mirzapoor is *Kirana* (grocery, spices, &c.) and copper and zinc. The difficulty of getting these returns you have no notion of.

Statement shewing the daily price of the three chief articles of consumption in Camp with the Commissioner, Nerbudda Territory.

NOVEMBER, 1838.

Date.	Place.	Gram.	Ata.	Salt.	Remarks.
		Seers pr. R.	Seers pr. R.	Seers pr. R.	
23	Prehut Nullah, ..	27	22	6	Supplies from Jubbulpoor.
24	Booragur, ...	27	22	6	Ditto from Punagur.
25	Tulwa Tank,......	27	22	6	Sehora a large village.
26	Kooa, ...	26	21	6	Good sized village.
27	Kowreea,........	26	21	6	Ditto.
28	Bellary, ...	25	19	5	A large town much decayed.
29	Purhurwa, ...	24	18	5	From Chuka and other villages.
30	Kunhwara*,......	16	15	5	An independent chief, Tucoor Praug Das.

* In less than seven miles this rise in the price of gram took place.

Memorandum of march with C. Fraser, Esq. agent, Governor General, on his Annual Circuit through the Saugor and Nerbudda territories, shewing the daily price of the three great articles of consumption in camp, gram*, ata† and salt.

DECEMBER, 1838.

Date.	Place.	Gram.	Ata.	Salt.	Remarks.
		Seers pr. R.	Seers pr. R.	Srs. p. R.	
1	Raghoogurh, ...	16	15	6	Tacoor Prag Dus—Capital.
2	Ditto, ...	16	15	6	
3	Karu Talao, ...	16	15	6	Ditto Elaka.
4	Bhudunpoor, ...	18	15	6	Tacoor Bissen Singh.
5	Nundun, ...	18	15	6	Ditto.
6	Umurputn, ...	20	18½	7	Rewah State.
7	Kutra, ...	17	17	7	Ditto.
8	Rewah, ...	17	17	7	Ditto Capital.
9	Ditto, ...	17	17	7	
10	Pooreyna, ...	17	17	7	Ditto—Small village.
11	Burow, ...	16	16	6	Ditto ditto.
12	Chichae, ...	16	16	6	Ditto ditto, waterfall.
13	Simreea, ...	16	16	6	Ditto.
14	Bursinghpoor, ...	17	16	6	Has been a very large town and fort.
15	Jytwar, ...	20	16	6	
16	Nukteemegdaye, ..	20	18½	6	Small village,—came here to settle a boundary dispute between the Rewah and Kotac States.
17	Ditto, ...	20	18½	7	
18	Ditto, ...	20	18½	7	
19	Ditto, ...	20	18½	6	
20	Ditto, ...	20	18½	6	
21	Ditto, ...	20	18½	6	
22	Ditto, ...	20½	19	6	
23	Sohuwul, ...	20½	19	6	An independent State,—has been a large fort, town in decay.
24	Nagound, ...	20½	19	5	Oochara Raja's Capital.
25	Buteea, ...	18	17½	5	Ditto.
26	Oocheyra, ...	18	17½	5	Former Capital.
27	Myheer, ...	18	17½	5	Tacoor Bissen Singh's Capital.
28	Kooserie, ...	18	17½	5	Small village Myheer State.
29	Nurgong, ...	18	17½	5	Ditto ditto.
30	Jagahie, ...	19	19	5	Ditto ditto.
31	Poorayna, ...	21	18	5	Punnah State.

* Cicer arietinum.

† Wheaten flour.—H. H. S.

JANUARY, 1839.

Date.	Place.	Gram.	Ata.	Salt.	Remarks.
		Seers pr. R.	Seers pr. R.	Srs p.R	
1	Hurdwara, ...	21	18	5	Jubulpoor Pergunna.
2	Burgaon, ...	21	18	5	Ditto.
3	Koomharee, ...	21	18	5	Hutta ditto.
4	Pipereea Ghat, ...	26¾	21½	5	Ditto.
5	Bilthurra, ...	26	21½	5	Dumoh ditto.
6	Dumoh, ...	26	21¾	5	A large thriving town.
7	Kopra River 3 miles west, ...	26	21¾	6	Supplies from Dumoh.
8	Sonar do. 13 do. W.	24	22	6	Ditto from Puthereea—large town.
9	Shahpoora, ...	22½	21¼	6	Saugor Elaka.
10	Bridge over the Beos	22	21	6	Dumgasera and Sanodha.
11	Saugor, ...	22	22	6	
12	Ditto, ...	22	22	6	
13	Ditto, ...	20	21½	6	
14	Ditto, ...	22	22	6	
15	Ditto, ...	22	22	6	
16	Ditto, ...	22	22	6	
17	Ditto, ...	22	22	6	
18	Ditto, ...	22	22	6	
19	Ditto, ...	22	22	6	
20	Chitoru, ...	22	22	6	Large village Saugor Elaka.
21	Soorkhee, ...	24	22½	6	Ditto.
22	Burkotee, ...	24	22½	6	Ditto.
23	Gooyhamu, ...	28	25	7	Ditto—has been large town and fort.
24	Deooree, ...	28	25½	8¾	Ditto town fort in ruins.
25	Muhurajpoor, ...	27	24	10	
26	Sooa Talao, ...	27	24	10	Large villages about.
27	Brimhan Ghat, Nerbudda, ...	28	24	10	Chawputhur, a large town, fort in ruins.
28	Ditto, ...	28	22	10	Cross the river into the Nursinghpoor district.
29	Koolerie (15 miles from Nursinghpoor,)	30	23¾	10	At this village in 1826 I got 192 seers of gram for a rupee.
30	Chiria, ...	30	23¾	10	Villages near.
31	Gurrahwara, a large town, ...	30	23¾	10	On the Sukkur river with a small gurhee used as a tuhsuldaree.

FEBRUARY, 1839.

Date.	Place.	Gram.	Ata.	Salt.	Remarks.
		Seers pr. R.	Seers pr. R.	Srs p. R.	
1	Gurrhawurah, 30 miles, ...	30	23¾	8	W. of the old cantonments of Nursinghpoor or Gurrahwarah.
2	Panugurh on the Doodie R., ..	30	23¾	8	Poor village.
3	Futtehpoor ...	34	24	8	Under 3 Goand Rajas who all live here.
4	Kunchuree on the Dunwa R., ..	30	22	6	Nagpoor State.
5	Brought up by rains, ...	30	22	6	
6	Puggara some 3000 ft. high,	26	22	6	A Tacoor village 6 or 8 huts, Nagpoor State.
7	Puchmarree 4500 ft. high, ...	25	19	6	Ditto 30 or 40 huts; one table-land, Nagpoor State.
8		25	19	6	Nagpoor State.
9	Puggara again,	25	22	6	
10	Kunchuree ditto,	30	22	6	
11	Fissooa, a Tacoor—100 huts,	30	22	6	Nagpoor State.
12	Turwan or Turow	34	24	6	Hoshungabad Elaka, large villages all about.
13	Sohagpoor, large town, ...	36¾	28	8	Fort in good repair, small.
14	Semree	37	28	8	From Semree to Babye is 22 miles, and I once saw it a dense jungle; at Semree the dak choukie was a sort of Martello tower; now it is all nearly cultivated and inhabited.
15	Babye, large thriving town	42	31	8	
16	Bundraban, 4 miles E. of Hoshungabad, ..	42	31	8	
17	Ditto, ...	42	31	8	
18	Hoshungabad, ..	42	31	8	
19	Ditto, ...	42	31	8	
20	Ditto, ...	42	31	8	
21	Ditto, ...	41	31	8	
22	Ditto, ...	42	31	8	
23	Byrakherie, ...	46	36	7	Thriving villages all about.
24	Bughwara, ...	46	36	7	Ditto.
25	Secoony, ...	37	32	7	A large thriving town with good two and three storied houses.
26	Nundurwara, ..	37	32	7	Here leave the valley of Nurbudda and ascend the Hills of the Betool district.
27	Laree Am, ...	37	36	7	A very romantic spot in the jungle—no village.
28	Bordha, ...	37	36	7	Hill village.

MARCH, 1839.

Date.	Place.	Gram.	Ata.	Salt.	Remarks.
		Seers pr. R.	Seers pr. R.	Srs p.R	
1	Bhamra Nuddee, ..	30	25	6	A mere choukie.
2	Sahpoor, ...	31	25	6	Large for this part of the country.
3	Neempanee, top of a steep ghat.	31	25	6	A mere choukie.
4	Betool, ...	31	25	6	The town is 3 miles south of the Station which should have been Kherla.
5	Sohagpoor, ...	31	25	6	Small village—capital Sugar-cane.
6	Sussaebur, Hill village, ...	32	26	6	
7	Jamburra, ...	35	26	6	
8	Bordaye, ...	37	29	6	Nagpoor State.
9	Buttowrea, ...	35	29	6	Ditto.
10	Oourghorhilly, poor,	37	29	6	
11	Oourait, ...	46	32	6	Rather large village.
12	Jumuneea, Hill village, ...	48	32	8	
13	Chindwara, ...	48	32	8	Thriving town, fine gunj (market place) built by Montgomery.
14	Kyrie Luddoo, ...	58	35	5	Good village.
15	Painch River, ...	58	35	5	Villages around.
16	Chowrie, ...	52	32	5	Large village.
17	Koka, ...	42	32	5	Seeoonee district.
18	Seeoonee, ...	40	32	5	
19	Ditto.	40	32	5	
20	Ditto, ...	40	32	5	
21	Konerwara, ...	40	32	5	
22	Kyra Maira, ...	40	32	5	
23	Keolaree, ...	40	32	5	Country poor and villages small.
24	Nynpoor, ...	40	32	5	
25	Jhiria, ...	38	28	6	
26	Mundla, ...	42	29	6	Has been a large place, fine fort in ruins.
27	Ditto, ...	42	29	6	
28	Ditto, ...	42	29	6	
29	Ramnuggur, in decay, ...	42	29	6	
30	Mendlah, ...	42	29	6	A large place here of the former Goand Rajas.
31	Phool Saugor, ..	42	29	6	

APRIL, 1839.

Date.	Place.	Gram.	Ats.	Salt.	Remarks.
		Seers pr. R.	Seers pr. R.	Srs p.R.	
1	Shunkurgunj, ...	50	29	7	The whole of the road from Mundla to this is a seriesof trap hills and little fertile vallies. Villages small and not very numerous. Parts very wild and much infested with tigers.
2	Pipeereea near Jhaiyhnuggur, ..	50	29	7	
3	Sahejpooree, ...	50	29	6	
4	Chewlea on Nerbudda R., ...	52	29	8	
5	Kisale, ...	40	29	8	
6	Chatturpoor, ...	50	29	8	
7	Jubulpoor.				

DIARY.

Prices of Wheat, Gram, and Salt, in a march with the Governor General's Agent through the Saugor and Nerbudda territories, months of November, December, 1839, January, February, 1840*, kept by George Green Spilsbury, Esq., Surgeon to the Agency.

1839.	Gram. Seers.	ta. Srs	S Srs		
Nov. 23	†38	27	10	Hinowta,	These marches were down the valley and on the Banks of the Nerbudda, and I find the price varied scarcely any in those seven days.
24				Bijnee,	
25				Belputhar,	
26				Jomee Pipeereea,	
27				Sunachur,	
28				Burbutee,	
29				Sakul,	
30				Guraroo,	

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* This march comprises a tour down the Valley of the Nerbudda as far as Hoshungabad, then north through the Bhopal State and Scindea's to Airun on the Benah,—Company's Elaka,—then by Khorae Jhillee to Ratgurh and Saugor,—thence by Dumoh to Jubbulpoor ; and the three last marches of February are on the Nerbudda in progress to Mundla and Omurkuntuk.

† The figures denote seers all of 80 tolahs for one Company's Rupee.

HALTING STAGES.

	Gram.	Ata.	Salt.	
1830.	Seers.	Seers.	Seers.	
Dec. 1	39	24	9½	Junction of Shair and Nerbudda.
2	30	24	8½	Brímhan ghat. A large village Chaourputher, old fort 2½ miles inland; a very fertile pergunna, and I believe still Scindea's although managed by us. The cultivation here remarkably fine.
3	30	24	8½	
4	30	24	8½	
5	30	23	9½	
6	29	22	9½	Murersor. A large village, one sheet of cultivation.
7	28	21	9½	Sahpoor. Ditto ditto.
8	28	21	9½	Chougaon. Close to the S. boundary of the valley and under the hills above is Chouragurh, a very extensive fort dismantled by us in 1819 or 20.
9	28	21	9½	Mohpanee. Close to this is the site of coal discovered by Major Ouseley.
10	30	22	9½	Burha. A large village situated at the gorge of the Hills S. which we entered.
11	28	21	9½	Chaour Panee. Nagpoor country, poorly cultivated and slovenly.
12	28	21	9½	Mohuljihir. Nagpoor Raj, a hot spring near; same valley—indeed an extensive one as far as Pissooa on the Deinwa where it contracts and is all jungle—our supplies came from our valley.
13	28	21	9½	
14	28	21	...	Kuncharee. Kuncharee on the Deinwa, a stream rising in the Mahadeo Hills.
15	...	...	...	
16	...	...	...	Puggara. A long ascent but very practicable.

The figures denote seers all of 80 tolas for one Co.'s Rupee.

HALTING STAGES.

1839.	Gram. Seers.	Ata. Seers.	Salt. Seers.	
Dec. 17	...	...	...	Puchmurree. This is a bad stony march of ascents and descents, but could be easily made a fine table-land, with peaks, the highest 5000 ft. Air very bracing here.
18	...	...	...	
19	30	23	9½	Puggara. There is a straight road to Pissooa from Puggàra, but we preferred the round for a comparative good road, for camels and bullocks.
20	30	22	9½	Kuncharee.
21	...	...	...	Pissooa. The valley ends here as far as cultivation goes.
22	...	...	...	Kyree. Pass through the hills again, bad stony ascents and descents.
23	34	24	10½	Sahagpoor. A large town rather and snug little fort, kept up as tuhseeldaree.
24	36	26	9½	Semree. Now cultivated and a thriving village. I remember the dák choukee, a stockade, and only a vestige of man.
25	35	26	9½	Babye. Large town near the Towa River.
26	35½	25	9½	Saugakherie. Very large thriving village, highly cultivated.
27	32	24	9½	Bandraban. Junction of Towa and Nerbudda.
28	32	24	9½	
29	33	29	9½	Hoshungabad. Some capital houses in the town, populous and thriving.
30	...	...	...	
31	...	...	...	

The figures denote seers all of 80 Tolas for one Co.'s Rupee.

Halting Stages.

1840.	Gram	Ata.	Salt.	
	Seers.	Seers.	Seers.	
Jan. 1	33	29	10	Hoshungabad.
2	29	24	10	Crossed the river Nerbudda. Bhopal state,—all jungle, next day ascend a ghat. Vindhya range.
3	29	24	10	Chowka. A few huts in the jungle—supplies from Hoshungabad.
4	24	22	8½	Akulpoor. Open out into an extensive plain the old Tal Pergunna.
5	23	21	10	Kulliakherie. These 3 marches more or less stony, jungle, hills with valleys.
6	24	22	11½	Chiklodh. From this to Bunchore, all hills, stones and jungle.
7	25	24	9½	Bunchore. At the edge of a fine valley extending N. to the ghats leading to Bundelkund.
8	26	25	10½	Raisien. A large town and fort on a hill, no great strength.
9	25	24	10	Pugnesur, on the Betwa.
10	23½	22	10	Sanchee—Kherie. Famous for the old tope like the Panjab ones. Sculpture beautiful. These 8 marches in Bhopal State.
11	27½	23½	10	Bhilsa. Scindea's large town—fort miserable—fine chouk.
12	27	23	10	Imaleea.
13	26	23	10	Undiya.
14	28½	24	10	Gunj Barouda. Passed through Barouda, a large town—it and the gunj decaying. Betwa close.
15	28½	24	10	Oodeepoor. Famous for a beautiful temple—town large, in decay.

HALTING STAGES.

1840.	Gram. Seers.	Ata. Seers.	Salt. Seers.	
Jan. 16	28½	24	10	Sherwasso. Village—from Bhilsa to the Scindea's country.
17	34	27	13½	Airun. Famous for its cut—town poor—fort in ruin—picturesque on the Benah
18	34	27	13½	River. A broad deep stream here.
19	34	27	13½	Sullapoor. On the Benah.
20	34	27	13½	Khorae. A large thriving town, fine houses, building amazingly improved under our rule.
21	34	27	13½	Khorasso. Good village, cultivation capital near the Benah.
22	31½	26½	13½	Putharee. Scindea's, a Puthan Nabob and Hindoo Tacoor reside here—ruins beautiful.
23	26	23	13½	Jhillee. On the Benah—Company's.
24	26	23	12½	Ratgurh. A large town and fort above—decaying since we received it from Scindea—fort useless.
25	26	22¾	12½	Gumeereea. Well cultivated—had a smart hailstorm here—some damage to crops.
26	26	22½	12½	Bhaupyle. At the foot of a small range of hills.
27	32	23¼	12½	Saugor.
28	..	..	..	
29	..	..	..	
30	..	..	..	
31	..	..	..	

HALTING STAGES.

1840.	Gram. Seers.	Ata. Seers.	Salt. Seers.	
Feb. 1	32	23½	12½	At Saugor.
2				
3				
4				
5				
6				
7	32	25	9½	Bridge over the Beos, Iron suspension.
8	32	25	9½	Sahpoor.
9	32	25	9½	Sonar River.
10	35	25	9½	Kopru River.
11	37	25	9½	Dumoh.
12				
13				
14	37	25	9½	
15				
16	38	26	9¾	Pipeereea
17	34	24	9½	Nowtah.
18	34	24	9½	Jubera.
19	36	26	9½	Saugrampoor.
20	38	26	9½	Heron River.
21	38	24	9½	Baghoree.
22	42	30	10½	Jubulpoor.
23				
24				
25				
26	40	27	10½	Burho near the Ranee Durgoutree's tomb killed in battle with one of Aurengzeb's Generals.
27	40	27	10½	Lukunpoor.
28	38	27	10½	Chewleea.
29	38	27	10½	Patha.

The Gram is chiefly cut at the end of this month, and is about five seers cheaper; much of the wheat also ripe. The harvest altogether seems very early this year, probably owing to the rains having taken off early in September. It promises a very abundant one in these territories if we have no hailstorms in March.

NOVEMBER, 1840.

Month.	Date.	Place.	Articles.	Rate.	For one Nagpoor R. equal to 14 ans. Company or about 1*s.* 11*d.* *Stg.*
Nov.	24	Prehut Village, 6 miles N. E. of Jubbulpoor,	Grass or hay,	1200	Bundles.
			Gram,	50	Srs. or 100 lbs. avoirdupoise.
	25	Ghosulpoor, . .	Gram,	50	Do. or 100 lbs.
			Flour,	28	Do. or 56 lbs.
			Salt,	8	Do. or 16 lbs.
			Wood,	4½	Mds. or cwt. 3, 24 lbs.
			Oil,	4	Srs. or 8 lbs.
	26	Tukwa, ...	Gram,	48	Do. or 96 lbs.
			Flour,	28	Do. or 56 lbs.
			Salt,	8	Do. or 16 lbs.
			Ghee,	2½	Do. or 5 lbs.
			Wood,	4½	Mds. or cwt. 3, 24 lbs.
			Hay,	1300	Bundles.
			Pice,	13¾	Gundas.
	27	Kooah, 5½, . .	Gram,	42	Srs. or 84 lbs.
			Flour,	26	Do. or 52 lbs.
			Salt,	8	Do. or 16 lbs.
			Wood,	4½	Mds. or cwt. 3, 24 lbs.
			Hay,	1300	Bundles.
			Ghee,	2½	Srs. or 5 lbs.
			Oil,	4	Do. or 8 lbs.
	28	Khureynee, 10¾,	Gram,	41	Do. or 82 lbs.
			Flour,	25	Do. or 50 lbs.
			Salt,	7	Do. or 14 lbs.
			Wood,	4½	Mds. or cwt. 3, 24 lbs.
			Hay,	1200	Bundles.
	29	Bellury, 7¼, . .	Gram,	40	Srs. or 80 lbs.
			Flour,	25	Do. or 50 lbs.
			Salt,	7	Do. or 14 lbs.
			Wood,	4½	Mds. or cwt. 3, 24 lbs.
			Hay,	1300	Bundles.
	30	Hurdoon, 9 miles,	Gram,	39	Srs. or 78 lbs.
			Flour,	25	Do. or 50 lbs.
			Salt,	7	Do. or 14 lbs.
			Wood,	5	Mds. or cwt. 3, 64 lbs.
			Hay,	1300	Bundles.

DECEMBER, 1840.

Month.	Date.	Place.	Articles.	Rate.	Nagpoor Rupee for.
Dec...	1	Pooreyna, 3½ miles, Punna Territory,	Gram,	32	Seers or 64 lbs.
			Flour,	24	Ditto or 48 lbs.
			Salt,	8	Ditto or 16 lbs.
			Pice,	13½	Gundas.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
			Hay,	1100	Bundles.
	2	Jokehie, 9, .. Tacoor Praug Dos country,	Gram,	34	Seers or 68 lbs.
			Flour,	20¾	Ditto or 41 lbs.
			Salt,	8	Ditto or 16 lbs.
			Hay,	1300	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	3	Nowgaon, 11¼, Tacoor Bissen, Singh's country.	Gram,	32	Seers or 64 lbs.
			Flour,	22	Ditto or 44 lbs.
			Salt,	6	Ditto or 12 lbs.
			Oil,	5	Ditto or 10 lbs.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
			Hay,	1000	Bundles.
	4	Khooserie, 9½, Bissen Singh's	Gram,	28	Seers or 56 lbs.
			Flour,	23	Ditto or 46 lbs.
			Salt,	6	Ditto or 12 lbs.
			Hay,	1200	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	5	Myhur 9½, Bissen Singh's Capital,	Gram,	28	Seers or 56 lbs.
			Flour,	22	Ditto or 44 lbs.
			Salt,	6	Ditto or 12 lbs.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
			Hay,	1100	Bundles.
	6	Bureythee, 10½ Bisens Singh's	Flour,	21	Seers or 42 lbs.
			Gram,	28	Ditto or 56 lbs.
			Salt,	6	Ditto or 12 lbs.
			Hay,	900	Bundles.
			Wood,	5	Mds. or cwt. 3, 64 lbs.
	7	Halt,........	Gram,	28	Seers or 56 lbs.
			Flour,	21	Ditto or 42 lbs.
			Salt,	6	Ditto or 12 lbs.
			Hay,	1000	Bundles.
			Wood,	4½	Mds. or cwt. 3, 24 lbs.
			Oil,	4	Seers or 8 lbs.

DECEMBER, 1840.

Month.	Place.		Rat	Nagpoor Rupee for.
Dec.	Halt,.	Gram,	28	Seers or 56 lbs.
		Flour,	21	Ditto or 42 lbs.
		Salt,		Ditto or 12 lbs.
		Wood,		Mds. or cwt. 2, 96 lbs.
		Hay,	1000	Bundles.
		Ghee,	2¾	Seers or 5½ lbs.
	Halt,.	Gram,	28	Ditto or 56 lbs.
		Flour,	21	Ditto or 42 lbs.
		Salt,	6	Ditto or 12 lbs.
		Wood,	4	Mds. or cwt. 2, 96 lbs.
		Hay,	900	Bundles.
	Umurpatun, Rewah state 7¾,	Gram,	28	Seers or 56 lbs.
		Flour,	21	Ditto or 42 lbs.
		Salt,		Ditto or 12 lbs.
		Wood		Mds. or cwt. 2, 96 lbs.
		Hay,	000	Bundles.
		Ghee,	2½	Seers or 5 lbs.
	11 Palee, 9¼, Rewah state,	Gram,	27	Ditto or 54 lbs.
		Flour,	20	Ditto or 40 lbs.
		Salt,	6	Ditto or 12 lbs.
		Wood,	4	Mds. or cwt. 2, 96 lbs.
		Hay,	800	Bundles.
		Pice,	13½	Gundas.
	12 Domree, 11 Rewah state,	Gram,	27	Seers or 54 lbs.
		Flour,	20	Ditto or 40 lbs.
		Salt,		Ditto or 12 lbs.
		Wood,		Mds. or cwt. 2, 96 lbs.
		Hay,	900	Bundles.
	13 Rewah Khass 6½,	Gram,	27	Seers or 54 lbs.
		Flour,	20	Ditto or 40 lbs.
		Salt,	6	Ditto or 12 lbs.
		Hay,	900	Bundles.
		Wood		Mds. or cwt. 2, 96 lbs.
	14 Halt,.	Gram,	27	Seers or 54 lbs.
		Flour,	20	Ditto or 40 lbs.
		Salt,		Ditto or 12 lbs.
		Wood		Mds. or cwt. 2, 96 lbs.
		Hay,	900	Bundles.

DECEMBER, 1840.

Month.	Date.	Place.	Articles.	Rate.	Nagpoor Rupee for.
Dec...	15	Halt, ...	Gram,	27	Seers or 54 lbs.
			Flour,	20	Ditto or 40 lbs.
			Salt,	6	Ditto or 12 lbs.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
			Hay,	1100	Bundles.
			Oil,	5	Seers or 10 lbs.
			Ghee,	2½	Ditto or 5 lbs.
	16	Poorayna, Rewah state, 8 miles,	Gram,	27	Ditto or 54 lbs.
			Flour,	20	Ditto or 40 lbs.
			Salt,	6	Ditto or 12 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	17	Chandpoor, Rewah state, 8 miles,	Gram,	27	Seers or 54 lbs.
			Flour,	20	Ditto or 40 lbs.
			Salt,	6	Ditto or 12 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	18	Chishaee, 4½, Rewah state,	Gram,	27	Seers or 54 lbs.
			Flour,	20	Ditto or 40 lbs.
			Salt,	6	Ditto or 12 lbs.
			Hay,	900	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	19	Simcreea, 10⅛, Rewah state,	Gram,	27	Seers or 54 lbs.
			Flour,	20	Ditto or 40 lbs.
			Salt,	6	Ditto or 12 lbs.
			Oil,	5	Ditto or 10 lbs.
			Ghee,	2½	Ditto or 5 lbs.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
			Hay,	900	Bundles.
	20	Hurriapore, 7¼, Punna state,	Gram,	27	Seers or 54 lbs.
			Flour,	20	Ditto or 40 lbs.
			Salt,	6	Ditto or 12 lbs.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	21	Bursingpore, 6¾ Punna state, and Gopawnee,	Gram,	27	Seers or 54 lbs.
			Flour,	20	Ditto or 40 lbs.
			Salt,	6	Seers or 12 lbs.
			Wood,	4	Mds. or cwt. 2, 96 lbs.

DECEMBER, 1840.

Month.	Date.	Place.	Articles.	Rate.	Nagpoor Rupee for
			Hay,	1100	Bundles.
			Oil,	5	Seers or 10 lbs.
	22	Halt,........	Gram,	27	Ditto or 54 lbs.
			Flour,	20	Ditto 40 lbs.
			Salt,	5	Ditto or 10 lbs.
			Hay,	800	Bundles.
			Wood,	4½	Mds. or cwt. 3, 24 lbs.
	23	Bumoree, 7¾,	Gram,	27	Seers or 54 lbs.
		Kothee state,	Flour,	20	Ditto or 40 lbs.
			Salt,	5	Ditto or 10 lbs.
			Hay,	900	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	24	Kothee,. 7⅝,	Gram,	27	Seers or 54 lbs.
		Khass, ...	Flour,	20	Ditto or 40 lbs.
			Salt,	5	Ditto or 10 lbs.
			Hay,	1100	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
			Oil,	5	Seers or 10 lbs.
			Ghee,	2¾	Ditto or 5½ lbs.
	25	Bureyna, Ko-	Gram,	27	Ditto or 54 lbs.
		thee state, 4⅝,	Flour,	20	Ditto or 40 lbs.
			Salt,	5	Ditto or 10 lbs.
			Hay,	900	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	26	Muchhuma,	Gram,	27	Seers or 54 lbs.
		Sutne Nulla,	Flour,	20	Ditto or 40 lbs.
		OocharaState,	Salt,	6	Ditto or 12 lbs.
		7¼,	Hay,	700	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
			Ghee,	2½	Seers or 5 lbs.
	27	Nugoundh, 7½,	Gram,	27	Ditto or 54 lbs.
		Residence of	Flour,	20	Ditto or 40 lbs.
		Oochara Raja	Salt,	6	Ditto or 12 lbs.
			Hay,	800	Bundles.
			Wood,	4½	Mds. or cwt. 3, 24 lbs.
			Oil,	6	Seers or 12 lbs.

DECEMBER, 1840.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee.
Dec...	28	Girwarah, 11¾,	Gram,	28	Seers or 56 lbs.
		Punnah State,	Flour,	21	Ditto or 42 lbs.
			Salt,	5	Ditto or 10 lbs.
			Hay,	1100	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	29	Toureea, 12,	Gram,	30	Seers or 60 lbs.
		Punnah State,	Flour,	21	Ditto or 42 lbs.
			Salt,	6	Ditto or 12 lbs.
			Hay,	1100	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	30	Mahewa, 9¼,	Gram,	32	Seers or 64 lbs.
		Punnah State,	Flour,	25½	Ditto or 51 lbs.
			Salt,	6	Ditto or 12 lbs.
			Hay,	1000	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
			Ghee,	2½	Seers or 5 lbs.
	31	Jegra, E. bank of Kain River, 13½ miles, Punnah State,	Gram,	30	Ditto or 60 lbs.
			Flour,	23	Ditto or 46 lbs.
			Salt,	6	Ditto or 12 lbs.
			Hay,	900	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.

JANUARY, 1841.

					For a Nagpoor Rupee.
Jan...	1	Ghysabad, ..	Gram,	51	Srs. (102 lbs.) 21 Srs. (42 lbs.) cheaper than yesterday.
		Beearmee River, 11¼, Company's Territory,	Flour,	27	Do. (54 lbs.) 4 srs. (8 lbs.) cheaper.
			Salt,	12½	Do. (25 lbs.) near 2 srs. (4 lbs.) dearer.
			Hay,	800	Bundles.
			Wood,	3½	Mds. (cwt. 2, 56 lbs.) ½ md. (40 lbs.) dearer.
	2	Hurdooa, 11¾,	Gram,	50	Seers or 100 lbs.
			Flour,	28½	Ditto or 57 lbs.
			Salt,	12½	Ditto or 25 lbs.
			Hay,	800	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.

JANUARY, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee.
Jan. ..	3	Horut 9,3 miles beyond Hatta	Gram,	50	Seers or 100 lbs.
			Flour,	28½	Ditto or 57 lbs.
			Salt,	12½	Ditto or 25 lbs.
			Hay,	900	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
	4	Kotree, 6¼, ..	Gram,	48	Seers or 96 lbs.
			Flour,	18	Ditto or 36 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	900	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
	5	Nursinghgurh, 8,	Gram,	50	Seers or 100 lbs.
			Flour,	28	Ditto or 56 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	800	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
	6	Beerkhrie Sonar River, 13,	Gram,	56	Seers or one cwt.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Pice,	15¾	Gundas.
			Hay,	900	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
	7	Sahpoor,	Gram,	43	Seers or 86 lbs.
			Flour,	28	Ditto or 56 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	800	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
	8	Presgrave's Bridge,	Gram,	43	Seers or 86 lbs.
			Flour,	28	Ditto or 56 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	900	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
			Oil,	5	Seers or 10 lbs.
					FOR A COMPANY'S RUPEE.
	9	Saugor, ...	Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.

JANUARY, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Company's Rupee.
	10	Saugor, ...	Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
	11	Saugor, ...	Gram,	47	Seers or 94 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Wood,	3½	Mds. or cwt. 2, 56 lbs.
			Hay,	700	Bundles.
	12		Gram,	47	Seers or 94 lbs.
			Flour,	30	Ditto oe 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Ghee,	2¾	Ditto or 5½ lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
	13		Gram,	47	Seers or 94 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Oil,	5	Ditto or 10 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
	14		Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Oil,	5	Ditto or 10 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
	15		Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
			Pice,	15¾	Gundas.
	16		Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.

JANUARY, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Company's Rupee.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
			Oil,	5	Seers or 10 lbs.
Jan...	17		Gram,	47½	Ditto or 95 lbs,
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt, 2, 16 lbs.
	18		Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
	19		Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
	20		Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
	21		Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
			Hay,	700	Bundles.
	22		Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
			Oil,	5	Seers or 10 lbs.
	23		Gram,	47½	Ditto or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.

JANUARY, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Company's Rupee.
Jan...	24		Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
	25		Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
			Oil,	5	Seers or 10 lbs.
	26		Gram,	47½	Ditto or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
			Oil,	5	Seers or 10 lbs.
	27		Gram,	47½	Ditto or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
	28	At Saugor,	Gram,	47½	Seers or 95 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or cwt. 2, 16 lbs.
			Oil,	5	Seers or 10 lbs.
					FOR A NAGPOOR RUPEE.
	29	Nuraolee, 11½,	Gram,	52	Seers or 104 lbs.
			Flour,	32	Ditto or 64 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	800	Bundles.
			Wood,	3½	Mds. or cwt. 2, 56 lbs.
	30	Chundremow,	Gram,	52	Seers or 104 lbs.
			Flour,	32	Ditto or 64 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	800	Bundles.

JANUARY, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee.
Jan. . .	31	Bunhat, 5¾, . .	Wood,	3½	Mds. or cwt. 2, 56 lbs.
			Pice,	15¾	Gundas.
			Gram,	54	Seers or 108 lbs.
			Flour,	33	Ditto or 66 lbs.
			Salt,	13	Ditto or 26 lbs.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
			Hay,	800	Bundles.

FEBRUARY, 1841.

Feb. . .	1	Khoorchie, 7⅜,	Gram,	54	Seers or 108 lbs.
			Flour,	32	Ditto or 64 lbs.
			Salt,	13	Ditto or 26 lbs.
			Oil,	5	Ditto or 10 lbs.
			Hay,	800	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
	2	Khorassa, 9¼,	Gram,	54	Seers or 108 lbs.
			Flour,	32	Ditto or 64 lbs.
			Salt,	13	Ditto or 26 lbs.
			Hay,	800	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
	3	Puthuree, 5¾, Scindeea's State,	Gram,	44	Seers or 88 lbs.
			Flour,	33	Ditto or 66 lbs.
			Salt,	15	Ditto or 30 lbs.
			Hay,	800	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
			Ghee,	2½	Seers or 5 lbs.
	4	Halt, ...	Gram,	54	Ditto or 108 lbs.
			Flour,	30	Ditto or 60 lbs.
			Salt,	15	Ditto or 30 lbs.
			Ghee,	2½	Ditto or 5 lbs.
			Hay,	800	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
	5	Oodeypore, 12¼, Scindea's,	Gram,	44	Seers or 88 lbs.
			Flour,	28	Ditto or 56 lbs.

FEBRUARY, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee.
			Salt,	13	Seers or 26 lbs.
			Oil,	6	Ditto or 12 lbs.
			Ghee,	2½	Ditto or 5 lbs.
			Hay,	900	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
Feb. ..	6	Basouda, 9¾,	Gram,	44	Seers or 88 lbs.
		Scindea's,	Flour,	28	Ditto or 56 lbs.
			Salt,	13	Ditto or 26 lbs.
			Oil,	6	Ditto or 12 lbs,
			Hay,	900	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs
	7	Undeya, 9,	Gram,	46	Seers or 92 lbs.
		Scindea's,	Flour,	22½	Ditto or 45 lbs.
			Salt,	18	Ditto or 36 lbs.
			Hay,	900	Bundles.
			Wood,	3½	Mds. or cwt. 2, 56 lbs.
	8	Maleea, 11,	Gram,	46	Seers or 92 lbs.
		Scindea's,	Flour,	28	Ditto or 56 lbs.
			Salt,	18	Ditto or 36 lbs.
			Hay,	800	Bundles.
			Wood,	3¾	Mds. or cwt. 2, 76 lbs.
	9	Bhilsa, 5, ...	Gram,	48	Seers or 96 lbs.
			Salt,	18	Ditto or 36 lbs.
			Flour,	28	Ditto or 56 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	10	Susbhow, 6¾,	Gram,	44	Seers or 88 lbs.
		Bhopal State,	Flour,	24	Ditto or 48 lbs.
			Salt,	13	Ditto or 26 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	11	Pugnesur on the Betwa, Bhopal State,	Gram,	1	Md. or 80 lbs.
			Flour,	28	Seers or 56 lbs.
			Salt,	13	Ditto or 26 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	12	Raisen, Bhopal State,	Gram,	45	Seers or 90 lbs.
			Flour,	24	Ditto or 48 lbs.

FEBRUARY, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee.
			Salt,	13	Seers or 26 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
Feb.	13	Halt, ...	Gram,	45	Seers or 90 lbs.
			Flour,	34	Ditto or 68 lbs.
			Salt,	13	Ditto or 26 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
			Oil,	6	Seers or 12 lbs.
	14	Bunchor, 8,	Gram,	41	Ditto or 82 lbs.
		Bhopal State,	Flour,	28	Ditto or 56 lbs.
			Salt,	13	Ditto or 26 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
			Pice,	13½	Gundas.
	15	Chikelode, 10½,	Gram,	1	Md. or 80 lbs.
		Bhopal State,	Flour,	28	Seers or 56 lbs.
			Salt,	13	Ditto or 26 lbs.
			Hay,	900	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	16	Kulliakherie, 8,	Gram,	44	Seers or 88 lbs.
		Bhopal State,	Flour,	32	Ditto or 64 lbs.
			Salt,	13	Ditto or 26 lbs.
			Oil,	6	Ditto or 12 lbs.
			Hay,	900	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
	17	Akulpoor, 6¼,	Gram,	41	Seers or 82 lbs.
		Bhopal State,	Flour,	31	Ditto or 62 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	900	Bundles.
			Wood,	4	Mds. or cwt. 2, 96 lbs.
			Oil,	6	Seers or 12 lbs.
	18	Chowka, 6,	Gram,	44	Ditto or 88 lbs.
			Flour,	22	Ditto or 44 lbs.
			Salt,	12	Ditto or 24 lbs.
			Hay,	100	Bundles.
			Wood,	5	Mds. or cwt. 3, 64 lbs.

FEBRUARY, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee, about 1s. 9½d. sterling.
Feb...	19	Jurrapoor on the Nerbudda, 9¼ miles, supplies come from Hoshungabad opposite the River in the Bhopal State.	Gram,	44	Srs. or 88 lbs.
			Flour,	32	Do. or 64 lbs.
			Salt,	12	Do. or 24 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
	20	Hoshungabad,	Gram,	56	Srs. or 1 cwt.
			Flour,	34	Do. or 68 lbs.
			Salt,	12	Do. or 24 lbs.
			Oil,	6	Do. or 12 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
	21		Gram,	56	Srs. or 1 cwt.
			Flour,	34	Do. or 68 lbs.
			Salt,	12	Do. or 24 lbs.
			Oil,	6	Do. or 12 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
	22		Gram,	56	Srs. or 1 cwt.
			Flour,	34	Do. or 68 lbs.
			Salt,	12	Do. or 24 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
	23		Gram,	56	Srs. or 1 cwt.
			Flour,	34	Do. or 68 lbs.
			Salt,	12	Do. or 24 lbs.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
			Hay,	800	Bundles.
	24	Hoshungabad,	Gram,	56	Srs. or 1 cwt.
			Flour,	34	Do. or 68 lbs.
			Salt,	12	Do. or 24 lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
	25	Bandrabhan, 4½ miles, junction of Towa with Nerbudda,	Gram,	56	Srs. or 1 cwt.
			Flour,	34	Do. or 68 lbs.
			Salt,	12	Do. or 24 lbs.
			Oil,	5	Do. or 10 lbs.
			Ghee,	3	Do. or 6 lbs.

FEBRUARY, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee, or about 1s. 9½d. sterling.
			Hay,	800	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
Feb...	26	Neemsariga,	Gram,	57	Srs. or 1 cwt. 2 lbs.
		6¼ miles,	Flour,	1	Md. or 80 lbs.
			Salt,	12	Srs. or 24 lbs.
			Oil,	6	Do. or 12 lbs.
			Ghee,	3¼	Do. or 6½ lbs.
			Hay,	800	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
	27	Patrowla, 10¾	Gram,	41	Srs. or 82 lbs.
		miles,	Flour,	28	Do. or 56 lbs.
			Salt,	13	Do. or 26 lbs.
			Ghee,	3½	Do. or 7 lbs.
			Oil,	5	Do. or 10 lbs.
			Hay,	900	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
	28	Kaisla, 8¾	Gram,	43	Srs. or 86 lbs.
		miles,	Flour,	26	Do, or 52 lbs.
			Salt,	10	Do. or 10 lbs.
			Ghee,	3	Do. or 6 lbs.
			Oil,	5	Do. or 10 lbs.
			Hay,	900	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.

MARCH, 1841.

					For one R. Nagpoor.
March	1	Bhounra Nulla in the Beitool district, 13¾ miles,	Gram,	43	Srs. or 86 lbs.
			Flour,	26	Do. or 52 lbs.
			Salt,	4	Do, or 2 cwt. 96 lbs.
			Hay,	700	Bundles.
			Wood,	3½	Mds. or 2 cwt. 56 lbs.
			Oil,	5	Srs. or 10 lbs.
	2	Sahpoor on the Marchna River, 7¾ miles,	Gram,	43	Do. or 86 lbs.
			Flour,	26	Do. or 52 lbs.
			Salt,	4	Do. or 8 lbs.

MARCH, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee, or about 1s. 9½d. sterling.
			Hay,	700	Bundles.
			Wood,	3½	Mds. or 2 cwt. 56 lbs.
March	3	Neempanee, 8¼ miles,	Gram,	1	Md. or 80 lbs.
			Flour,	26	Srs. or 52 lbs.
			Salt,	4	Do. or 8 lbs.
			Hay,	700	Bundles.
			Wood,	3½	Mds. or 2 cwt. 56 lbs.
			Oil,	5	Srs. or 10 lbs.
	4	Beitool, 13¼ miles,	Gram,	1	Md. or 80 lbs.
			Flour,	27	Srs or 54 lbs.
			Salt,	4	Do. or 8 lbs.
			Hay,	700	Bundles.
			Wood,	3½	Mds. or 2 cwt. 56 lbs.
	5	Sohagpoor, 6 miles,	Gram,	1	Md. or 80 lbs.
			Flour,	27	Srs. or 54 lbs.
			Salt,	4	Do. or 8 lbs.
			Hay,	700	Bundles.
			Wood,	3½	Mds. or 2 cwt. 56 lbs.
			Oil,	6	Srs. or 12 lbs.
	6	Chuhoondra, 7¾ miles,	Gram,	1	Md. or 80 lbs.
			Flour,	27	Srs. or 54 lbs,
			Salt,	4	Do. or 2 cwt. 96 lbs.
			Hay,	700	Bundles.
			Wood,	3¾	Mds. or 2 cwt. 76 lbs.
	7	Mooltaye, 10¼ miles, source of the Taptee River,	Gram,	1	Md. or 80 lbs.
			Flour,	27	Srs. or 54 lbs.
			Salt,	4	Do. or 8 lbs.
			Hay,	700	Bundles.
			Wood,	3¾	Mds. or 2 cwt. 76 lbs.
	8	Ehechunder on the Warda,	Gram,	1	Md. or 80 lbs.
			Flour,	20	Srs. or 40 lbs.
			Salt,	4	Do. or 8 lbs.
			Hay,	700	Bundles.
			Wood,	3¾	Mds. or 2 cwt. 76 lbs.
			Oil,	6	Srs. or 12 lbs.
	9	Halt. Brought up by a storm yesterday,	Gram,	1	Md. or 80 lbs.
			Flour,	27	Srs. or 54 lbs.

March, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee, or about 1s. 9¼d. sterling.
			Salt,	4	Srs. or 8 lbs.
			Hay,	710	Bundles.
			Wood,	3¾	Mds.or 2 cwt. 76 lbs.
March	10	Teegaon, 9 miles, Nagpoor state,	Gram,	66	Srs. or 1 cwt. 20 lbs.
			Flour,	27	Do. or 54 lbs.
			Salt,	5	Do. or 10 lbs.
			Hay,	710	Bundles.
			Wood,	3¾	Mds. or 2 cwt. 76 lbs.
	11	Pandoner, 5½ miles, Nagpoor state,	Gram,	66	Srs. or 1 cwt. 20 lbs.
			Flour,	28	Do. or 56 lbs.
			Salt,	5	Do. or 10 lbs.
			Hay,	700	Bundles.
			Wood,	3½	Mds. or 2 cwt. 56 lbs.
			Oil,	6	Srs. or 12 lbs.
	12	Seeoonee, 6¾ miles, Nagpoor state,	Gram,	66	Do. or 1 cwt. 20 lbs.
			Flour,	28	Do. or 56 lbs.
			Salt,	5	Do. or 10 lbs.
			Hay,	700	Bundles.
			Wood,	3	Mds. or 2 cwt. 16 lbs.
	13	Chuhowlee, 6¾ miles, Nagpoor state,	Gram,	58	Srs. or 1 cwt. 4 lbs.
			Flour,	28	Do. or 56 lbs.
			Salt,	5	Do. or 10 lbs.
			Hay,	600	Bundles.
			Wood,		
	14	Oomree, 10¼ miles, Nagpoor state,	Gram,	1	Md. or 80 lbs.
			Flour,	28	Srs. or 56 lbs.
			Salt,	5	Do. or 10 lbs.
			Hay,	600	Bundles.
			Wood,	3¼	Mds. or 2 cwt. 36 lbs.
			Pice,	13½	Gundas.
	15	Bhurhumporee 13¾ miles, Nagpoor state,	Gram,	1	Md. or 80 lbs.
			Flour,	32	Srs. or 64 lbs.
			Salt,	4	Do. or 8 lbs.
			Oil,	6	Do. or 12 lbs.
			Hay,	500	Bundles.
			Wood,	3¾	Mds. or 2 cwt. 76 lbs.

MARCH, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee, or about 1s. 9½d. sterling.
March	16	Chukur Nulla, 6¾ miles, Nagpoor state,	Gram,	1	Md. or 80 lbs.
			Flour,	32	Srs. or 64 lbs.
			Salt,	4	Do. or 8 lbs.
			Hay,	400	Bundles.
			Wood,	2½	Mds. or 1 cwt. 88 lbs.
	17	Seetabuldee, Nagpoor Residency,	Gram,	37	Srs. or 74 lbs.
			Flour,	30	Do. or 60 lbs.
			Salt,	4	Do. or 8 lbs.
			Wood,	2	Mds. or 1 cwt. 48 lbs.
			Hay,	300	Bundles.
	18	Halt,	Gram,	37	Srs. or 74 lbs.
			Flour,	30	Do. or 60 lbs.
			Salt,	4	Do. or 8 lbs,
			Hay,	300	Bundles.
			Wood,	2	Mds. or 1 cwt. 48 lbs.
	19	Kamptee, Hd. Qrs. Nagpoor Subsy. Force,	Gram,	36	Srs. or 72 lbs.
			Flour,	30	Do. or 60 lbs.
			Salt,	4	Do. or 8 lbs.
			Hay,	250	Bundles.
			Wood,	2½	Mds. or 1 cwt. 88 lbs.
	20	Kairdee, Nagpoor state,	Gram,	38	Srs. or 76 lbs.
			Flour,	30	Do. or 60 lbs.
			Salt,	4	Do. or 8 lbs.
			Hay,	300	Bundles.
			Wood,	2	Mds. or 1 cwt. 48 lbs.
	21	Ramtak, 7½ miles, Nagpoor state,	Gram,	38	Srs. or 76 lbs.
			Salt,	4	Do. or 8 lbs.
			Flour,	30	Do. or 60 lbs.
			Pice,	13½	Gundas.
			Hay,	300	Bundles.
			Wood,	2¼	Mds. or 1 cwt. 68 lbs.
			Oil,	6	Srs. or 12 lbs.
	22	Mohudee, 9¾ miles, Borders of the Company and Nagpoor state,	Gram,	1	Md. or 80 lbs.
			Flour,	30	Srs. or 60 lbs.
			Salt,	4	Do. or 8 lbs.
			Hay,	375	Bundles.
			Wood,	2½	Mds. or 1 cwt. 88 lbs.

MARCH, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee, or about 1s. 9½d. sterling.
March	23	Doongatal, 5½ miles,	Gram,	1	Md. or 80 lbs.
			Flour,	30	Srs. or 60 lbs.
			Salt,	4	Do. or 8 lbs.
			Hay,	400	Bundles.
			Wood,	3½	Mds. or 2 cwt. 56 lbs.
	24	Khewasser, 10¼ miles,	Gram,	1	Md. or 80 lbs.
			Flour,	30	Srs. or 60 lbs.
			Salt,	4	Do. or 8 lbs.
			Hay,	500	Bundles.
			Wood,	3¾	Mds. or 2 cwt. 76 lbs.
	25	Khoraee, 10 miles,	Gram,	1	Md. or 80 lbs.
			Flour,	34	Srs. or 68 lbs.
			Salt,	4	Do. or 8 lbs.
			Oil,	6	Do. or 12 lbs.
			Hay,	500	Bundles.
			Wood,	3	Mds. or 2 cwt. 16 lbs.
	26	Mohgoor, 8¾ miles,	Gram,	1	Md. or 80 lbs.
			Flour,	34	Srs. or 68 lbs.
			Salt,	4	Do. or 8 lbs.
			Pice,	13½	Gundas.
			Hay,	550	Bundles.
			Wood,	3¼	Mds. or 2 cwt. 36 lbs.
	27	Gopalgunj, 4¼ miles,	Gram,	1	Md. or 80 lbs.
			Flour,	34	Srs. or 68 lbs.
			Salt,	4½	Do. or 9 lbs.
			Hay,	700	Bundles.
			Wood,	4½	Mds. or 3 cwt. 24 lbs.
	28	Seeoonee, 8½ miles,	Gram,	52	Srs. or 104 lbs.
			Flour,	1	Md. or 80 lbs.
			Salt,	5	Srs. or 10 lbs.
			Pice,	13½	Gundas.
			Hay,	800	Bundles.
			Wood,	3¾	Mds. or 2 cwt. 76 lbs.
	29	Naraingunj, 12½ miles,	Gram,	50	Srs. or 100 lbs.
			Flour,	36	Do. or 72 lbs.
			Salt,	5	Do. or 10 lbs.

MARCH, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee, or about 1s. 9½d. sterling.
			Hay,	800	Bundles.
			Wood,	3½	Mds. or 2 cwt. 56 lbs.
March	30	Chupara, 9¼ miles,	Gram,	50	Srs. or 100 lbs.
			Flour,	35	Do. or 70 lbs.
			Salt,	5	Do. or 10 lbs.
			Oil,	6	Do. or 12 lbs.
			Hay,	900	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
	31	Gunnessgury, 9 miles,	Gram,	45	Srs. or 90 lbs.
			Flour,	33	Do. or 66 lbs.
			Salt,	5	Do. or 10 lbs.
			Hay,	900	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.

APRIL, 1841.

April	1	Lukhnadown,	Gram,	52	Srs. or 104 lbs.
			Flour,	34	Do. or 68 lbs.
			Salt,	6	Do. or 12 lbs.
			Hay,	1100	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
	2	Shor River, ..	Gram,	50	Srs. or 100 lbs.
			Flour,	34	Do. or 68 lbs.
			Salt,	6	Do. or 12 lbs.
			Hay,	1100	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
	3	Dooma, ...	Gram,	50	Srs. or 100 lbs.
			Flour,	34	Do. or 68 lbs.
			Salt,	6	Do. or 12 lbs.
			Hay,	1000	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs

APRIL, 1841.

Month.	Date.	Place.	Articles.	Rate.	For a Nagpoor Rupee, or about 1s. 9½d. sterling.
April	4	Raichore,....	Gram,	48	Srs. or 96 lbs.
			Flour,	27	Do. or 54 lbs.
			Salt,	6	Do. or 12 lbs.
			Hay,	1000	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.
			Oil,	5	Srs. or 10 lbs.
	5	Ghat Pipereea,	Gram,	50	Do, or 100 lbs.
			Flour,	32	Do. or 64 lbs.
			Salt,	6	Do. or 12 lbs.
			Hay,	1000	Bundles.
			Wood,	4	Mds. or 2 cwt. 96 lbs.

ART. XVIII.—*Notes of a temporary Residence on the Table-land of Omarkantak, Central India—May* 31, 1841. *By D. F. McLeod, Esq. Political Officer at Jubbulpore.*

(Read at the Meeting of the Society on the 15th July, 1841.)

My ascent up the cliffs, and visit to this peaceful retreat have afforded me a little breathing room.

The date of this letter will no doubt suprise you—and as it may interest not only yourself but the public to know something of the climate and temperature during the hot-season in this elevated region; I annex a table of the

Hour of day.	30, May in shade.	31st May.	
		In shade.	In sun.
5 A. M.	70° 0′		——
6 A. M.	——	72 30	——
8 A. M.	81° 45′	——	——
9 A. M.	——	83 0	104 0
12	85° 0′	82 0	a shower
3 P. M.	85 30	86 0	99 0
6 P. M.	80 30	——	——
9 P. M.	72 0	——	——

thermometer, as far as I have registered it since my arrival here. The climate is in fact quite European;* there being a lightness and elasticity in the air, which is truly refreshing, and with the aid of an umbrella, the sun is in no way oppressive or intolerable at any hour of the day. The nights are quite cold, requiring a ruzâi or thick cotton quilt, at least by way of covering, and the dew falling heavily towards morning.

As we have had rain in other parts during the month, I at first supposed that the sensation of coolness must be attributed in some measure thereto; but the residents of the place assure me that this is not the case—that a month rarely or never passes without rain—and that the heat is never very perceptibly greater than at present. Adjoining to this table-land (which is but 5 or 6 miles in breadth) there are vast tracts of beautiful and fertile country almost in its virgin state, situated only 2 or 300 feet lower, and, as the annexed register of the thermometer, taken three days ago at my halting place before ascending to this, will shew, almost equalling it in coolness.

Hour of day.	*Ther. in shade.*
5 A. M	71° 0
9 A M	89 0
noon.	90 0
4 P. M.	90 30
6 P. M.	80 0
9 P. M.	77 0

How favourable a spot then would this be for acclimating the vegetable productions of colder climates, and in truth the spot appears to me a most inviting one for the residence of Europeans. I hope in a year or two more to have a good high road from Chattesgurh to Bundelkhund, between which the traffic is extensive, passing close in its vicinity, and rendering it readily accessible; and as I have no doubt left that it may be rendered highly valuable to

Jabbalpûr at least, (from which it might be made three nights' dâk) as a sanatarium, I hope we may, ere a much longer period elapses, see a bungalow erected here.

A supposition generally exists that fevers must prevail here during the rains; and without foreigners residing here during that season, it would be difficult to determine the point—but the residents assure me that it is by no means remarkable in that respect—and as the country for a long distance to the west of it (with the exception of the first two or three miles immediately adjoining) consists of fine open undulating plains, I do not see why it should. At all events, however, as a sanatarium, the hot weather is the period during which it would be resorted to. Next season, should the society think it desirable to try foreign seeds here, I will find means for having them sown and looked to.

ART. XIX.—*Report of Special Committee of Statistics of Agriculture. Market prices of staple articles in various localities.*

[Read and adopted at the Meeting of 9th September, 1840.]

The Special Committee in bringing its labours to a close, deem it right to advert slightly to the nature of the task which it had undertaken, and the manner in which it has been performed.

2.—The Society will not fail to recollect, that on the receipt of letter from the Secretary to the Government of India, giving cover to the copy of a despatch

(A) from the Hon'ble the Court of Directors, applying at the instigation of the Royal Asiatic Society of Great Britain and Ireland, to their Right Hon. the Governor General in Council, for information respecting the prices, &c. of the most ordinary productions of India, in various districts, if it could be supplied without much inconvenience, a Special Committee was constituted at the December Meeting of 1838, to devise the means best calculated to meet the wishes of the Supreme Government, (B) and that at the ensuing Meeting a report was brought up, read, and approved, wherein it is recommended "that from their well known habits of industry, their greater leisure, and, generally, the love which they bear to science, the Medical Officers attached to the political and civil arms of the

(A.)—"We transmit as a number in the packet, the copy of a letter from the Secretary to the Asiatic Society with enclosures, applying for information respecting the prices, &c. of the most ordinary productions of India in various districts, and we desire that you will furnish this information, if it can be procured without much inconvenience."

(B.)—"I am directed by the Hon'ble the President in Council to transmit to you the accompanying copy of a letter No. 10 of 1838, from the Hon'ble the Court of Directors in the Public Department, dated the 17th of August, and of its enclosures, and to request that the Government may be favored with your suggestions as to the best mode of meeting the wishes of the Committee of the Royal Asia-the Society in the matter referred to.

"(Sd.) H. T. PRINSEP,
"*Sec. to the Govt. of India.*
"*Council Chamber,*
Nov. 28th, 1838."

Services should be solicited to impose on themselves the task of collecting returns touching the productions and prices of articles of Agricultural produce at the chief mart and an obscure village conjointly in each district, as suggested by the Royal Asiatic Society of Great Britain and Ireland*."

3.—The Society having adopted this report of your Committee, a communication was made to the Supreme Government by the Secretary, under date 19th January, and to it a reply was received and read at the Meeting of February, 1839, in which, after acknowledging the receipt of the Report, and letter which accompanied it, His Honor the President in Council announces (C) that the Lithographic Committee has been ordered to afford the aid of that Institution in preparing forms and statements for circulation to the Medical Officers. On this it was resolved that "the Special Committee remain as now constituted, and give the Society the benefit of its services."

(C.)—*Extract.* "In reply, I am directed to state, that His Honor the President in Council has ordered the Lithographic Committee to give you the aid of that Establishment in preparing forms and statements for circulation to the Medical Officers, and will be happy to learn that the Agricultural and

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* For particulars of first labors of the Committee see page 8 of Proceedings of the Society of 1839, Vol. VII.

Horticultural Society can procure from the Medical or any other Officers the information required by the Statistical Committee of Agriculture and Commerce of the Royal Asiatic Society of Great Britain and Ireland."

4.—In consequence of this resolution your Committee re-assembled on Saturday the 23rd of March, and took measures for carrying the design into execution. For this purpose the original form of table, as furnished by the Home Authorities, was new modelled, and a Circular prepared for distribution to Medical Officers at Civil Stations throughout the country.

5.—Here for a time the labours of your Committee ceased, but as its expectations of obtaining replies began to be fulfilled, it re-entered on the duties of its office and took into consideration the method that it would be best the information should be given in.

6.—The Royal Asiatic Society having requested "that the returns should be arranged so as to shew, as far as they possibly could, the course of trade geographically both internal and external*," your Committee devised a form of table for each article separately, and placed the District whence information regarding it has been obtained, in such a manner as to embrace, as much as possible, the object sought by the applicants. In addition to this it occurred to your Committee that a further benefit would be conferred by appending a map of a geological character, showing the position of the places whence the returns have been obtained, in order that the relative distances might be the better seen, and the nature of the soil ascertained.

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* Letter from the Hon'ble Holt Mackenzie, Chairman of the Committee of Agriculture and Commerce of the Royal Asiatic Society of Great Britain and Ireland, to Secretary of the Society, and eventually to Secretary at India House, dated July 21st, 1838.

7.—In regard to this latter object,—the geological construction of the map,—your Committee would desire to mention that it by no means wishes to vouch for its complete accuracy. In the present limited extent of knowledge of the geognostic features of the country, a strictly accurate map cannot be framed; but still your Committee thinks it due to itself to say that the best authorities, among others Calder, Coulthard, Franklin, Hardy, Grant, Baird, Smith, and the Calcutta Coal Committee, have been consulted in the formation of it, and that, as affording a fair idea of the character of the formations, it may be relied on.

8.—With respect to the extraordinary discrepancy in the nature of the selling prices of the various articles recorded in the tables now submitted in the several districts mentioned, your Committee has nothing to offer. The circumstance will speak for itself.

9.—The Medical Officers who have thus so handsomely come forward to assist in bringing to light the valuable information which your Committee has now the pleasure to present, have each had their names placed under the station where they reside; and your Committee cannot avoid calling the attention of the Society to the more than ordinary zeal which has been shown by Mr. Spilsbury*, Surgeon of the Political

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* Mr. Spilsbury's valuable contributions will be seen in preceding pages.—H. H. S.

Agency in the Nerbudda. This gentleman has not only kindly filled up for your Committee, the blank forms of tables which were sent to him, but he has favored your Committee with a most valuable diary of the three chief articles of consumption, while on an official tour through the territories, whereby the sudden and startling difference will be frequently perceived of prices rising and falling at places within a few miles of each other, just as the article required would appear to be in the hands of one or more individuals, or more plentiful or scarce, so little would seem to be the communication between village and village, or so few the facilities for making it more frequent.

10.—In conclusion, your Committee has further to remark that it has been careful to reduce the returns to one uniform standard of weight and money, in which it has been entirely indebted to the able assistance of Baboo Kissenchund Dutt, Principal Accountant to the Board of Customs, Salt and Opium; that a separate memorandum has been appended of such information as could not well be inserted in the regular tables; and that the whole, it trusts, will prove acceptable to the Government and the Royal Asiatic Society of Great Britain and Ireland.

H. M. PARKER, *Senior Member of the Board of Customs.*
R. WALKER, *Collector of Customs.*
H. PIDDINGTON.
HENRY H. SPRY, M. D. *Secretary.*

TURMERIC.

Table showing the selling price of Turmeric at a chief Mart and an obscure Village conjointly along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals during the year 1838-39.

N. B. The weights contained in the returns, whence these tables are formed, have been reduced to the standard of a seer of 80 tolahs, which is the standard unit of the British Indian system of weight; the tolah being equal to 180 grains Troy; and the money rate to that of the standard currency of the country, i. e. the Company's Rupee of 165 grains Troy of pure Silver, the value of the Rupee may be taken at 2 Shillings Sterling. The seer is divided into sixteen chittacks; thus 36 : 3, signifies 36 seers and 3 chittacks. The seer is equal to 2 lb. 6 oz. Troy and 2 lb. 0 oz. 14 dr. 628 dec. Avoirdupoise.

	Names of Place.	At the Magistrate's Station or chief Mart.				At a small Village.				Remarks.
		May.		Dec.		May.		Dec.		
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Course of the Ganges.	Delhi, on the Jumna, 50 miles from the Ganges, J. Ranken, Esq. M. D.	6¼		6½		5		5		
	Shahjehanpore, 20 miles inland, A. Chalmers, Esq. M. D.	4	14	0		4	3	0		
	Jaunpore, 23 miles inland, A. Vans Dunlop, Esq. M. D.	5	6	6		6	10	6		
	Benares, A. K Lindesay, Esq.	11 & 10	6	11 & 10	6		0	0		
	Patna, S. Davies, Esq.	9	8	9	8	14	4	0		
	Gyah, 55 miles inland, J. B. Dickson, Esq.	14			8	14	11	8	4	
	Monghyr, John Macrae, Esq.	12			8		0	0		

TURMERIC—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		Dec.		May.		Dec.		
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Course of the Ganges.	Purneah, 20 miles inland, J. C. Smith, Esq	20		20		40		0		
	Malda, 25 miles inland, J. Lamb, Esq.......	9		9		10		10		
	Dacca, Geo. Lamb, Esq.	13	4	12		13		16		
	Furreedpore, C. Mackintyre, Esq...........	16	14	16		0		0		
	Tipperah, (Comillah,) 51 miles S. E. from Dacca, E. Foaker, Esq.	52	15	58	7	82		82		
	Hooghly, Baboo Joykissen Mookerjee, through Jas. Esdaile, Esq. M. D., ...	8	3	9	4	9	4	9	4	
	Calcutta, Baboo Ramcomul Sen, ...	9 to 8		8 to 7		0		0		
	Hidgelee, A. Smith, Esq. M D.............	7	10	7	10	8	7	8	7	
Miscellaneous.	Pooree, R. B. Cumberland, Esq.	0		0		0		0		
	Balasore, W. S. Dicken, Esq.	8		8		8	14	8	14	
	Jubbulpore, G. G. Spilsbury, Esq., a good metalled road the whole way to Mirzapore on the Ganges, a distance of 239 miles, ..	9		8		5		9		It is also imported from Nagpore and sells at 4 seers.
	Himalaya Mountains Simla, D. Handyside, Esq. in 1839, ...	15		16		8		7		
	Emporah, (Joudpore,) A. Keir, Esq. M. D...	3	13	3	9	4	2	3	13	
	Neemuch, A. C. Duncan, Esq. M. D., ...	4		4		5		5		
	Sultanpore, (Oude,) J. V Leese, Esq......	11		0		0		0		
	Saugor, J. Eccles, Esq M. D., ...	4		4	4	4	8	4	8	
	Malacca, T. Oxley, Esq.,.................	0		0		0		0		
	Gowalparah, Assam, J. Arnott, Esq. M. D..	11	7	13	5	32		32		

DHALL.

Table showing the selling price of Dhall at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

Course of the Ganges.

Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
	May.		December.		May.		Dec.		
	s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Delhi, on the Jumna, 50 miles from the Ganges,	Medium	14¾	26		15		27½		
Shahjehanpore, 20 miles inland,	26	,, 6	0		29	2	0		
Jaunpore, 23 miles inland,	26	,, 5	22	8	23	13	21to22		The food crops of the people of this district are very various and constitute their chief industry; but little however is exported. Dhall is cultivated largely.
Benares,	22 to 23	2	18 12 to 19	13		0	22		
Patna,	28	8	19		33	4	0		
Gyah, 55 miles inland,	27	8	25	4	27	8	25	4	
Monghyr,	28		29		20 & 18		20 & 18		The following 4 sorts of Dhall are commonly grown and used in Monghyr, viz. Urhur, Kala Moog, Subz and Khessary, the last is the cheapest, ranging from 31 to 26 seers for a Rupee.
Purneah, 20 miles inland,	26		25		30		28		
Malda, 25 miles inland,	35		28		37		30		

DHALL—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		Dec.		
		s.	c.	s.	c.	s.	c.	s.	c.	
Course of the Ganges.	Dacca, (3 kinds,)	Diffrt.	rates.	0		0		0		There are three kinds of Dhall known in this district—Urhur dhall, Moog dhall, and Khessary dhall; the first was to be obtained in December 1838 for 21 seers the Rupee, and in May 1839, for 19 seers at Dacca; but at a distant village in December 16 seers and May 17. The second sort is somewhat cheaper, and the last ranges from 50 seers to 56 seers for the Rupee.
	Furreedpore,	50	6	46	14	0		0		The article here stated is sold at the public fairs of the district.
	Tipperah, (Comillah,) 51 miles S. E. from Dacca,	27	5	24	6	20	8	18	7	
	Hooghly,	32	13	35	14	35	14	38	15	
	Calcutta,	17	12½ to 16	20	to 19 22		0		0	

Dhall—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		Dec.		
		s.	c.	s.	c.	s.	c.	s.	c.	
Course of Ganges.	Hidgelee,	16		16		19		19		
	Pooree, (15 kinds.)	Diffrt. prices.		0		0		0		There are no fewer than fifteen different kinds of Dhall known in this district, ranging from 10 seers for the Rupee on to a 100.
	Balasore,	20		16		27	13	27	13	
Miscellaneous.	Jubbulpore, a good metalled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	40		20		26		33		
	Himalaya Mountains, (Simla,)	8		9		6		5		
	Emporah, (Joudpore,)	24	10	20	5	25	10	21		
	Neemuch,	13		11		17		17		
	Sultanpore, (Oude,)	32	2	45		34		42		
	Saugor, (4 kinds,)	Diffrt prices		0		0		0		
	Malacca,	0		0		0		0		
	Gowalparrah, (Assam,)	13	5	16		0		0		

SUGAR.

Table showing the selling price of Sugar at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

Course of the Ganges.

Names of Places.	At the Magistrate's Station, or chief Mart.						At a small Village.						Remarks.
	May. Seers per Co.'s R.			December. Seers per Co.'s R.			May. Seers per Co.'s R.			December. Seers per Co.'s R.			
	Refined Sugar or Misree.	Ordinary Sugar or Chenee.	Brown Sugar or Muscovado	Refined Sugar or Misree.	Ordinary Sugar or Chenee.	Brown Sugar or Muscovado	Refined Sugar or Misree.	Ordinary Sugar or Chenee.	Brown Sugar or Muscovado	Refined Sugar or Misree.	Ordinary Sugar or Chenee.	Brown Sugar or Muscovado	
	s. c.	s. c.	s. c.	s. c.	s. c.	s. c.	s. c.	s. c.	s. c.	s. c.	s. c.	s. c.	
Delhi, on the Jumna, 50 miles from the Ganges, ...	3 8	8 8	12 0	3 12	9 8	12 8	4 8	9 0	13 4	5 8	11 4	14 0	Jaggry or goor 12½ seers in May and 18 in Dec. Sugar is the grand staple of industry and wealth in this district (Jaunpore). It is from its returns that the people are chiefly able to meet the revenue demands.
Shahjehanpore, 20 miles inland, ...	4 3	8 5	13 14	0 0	0 0	0 0	4 3	8 5	12 6	0 0	0 0	0 0	
Jaunpoor, 23 miles inland, ...	Candy 2 13	4 3	7 0	Candy 3 8	4 12	11 3	Candy None	4 3	8 6	Candy None	5 6	10 12	
Benaras, ...	0 0	4 0	10 0	0 0	3 0	11 0	0 0	4 0	12 0	0 0	4 6	15 0	
Patna, ...	3 13	4 12	9 8	3 13	4 12	9 8	0 0	0 0	12 6	0 0	0 0	0 0	

SUGAR—*Continued.*

Course of the Ganges.

Names of Places.	At the Magistrate's Station, or chief Mart.												At a small Village.												Remarks.
	May. Seers per Co.'s R.						December. Seers per Co.'s R.						May. Seers per Co.'s R.						December. Seers per Co.'s R.						
	Refined Sugar or Misree.		Ordinary Sugar or Chenee.		Brown Sugar or Muscovado		Refined Sugar or Misree.		Ordinary Sugar or Chenee.		Brown Sugar or Muscovado		Refined Sugar or Misree.		Ordinary Sugar or Chenee.		Brown Sugar or Muscovado		Refined Sugar or Misree.		Ordinary Sugar or Chenee.		Brown Sugar or Muscovado		
	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	
					*Goor						*Goor						*Goor						*Goor		
Gyah, 55 miles inland,..	0	0	5	8	27	8	0	0	6	0	25	0	0	0	5	10	27	0	0	0	6	0	25	4	
																	Goor 22	 0					25	0	
Monghyr, ...	0	0	3	15	5	8	0	0	3	11	4	3	0	0	3	0	9	8	0	0	3	5	15	6	
	Candy				*Goor		Candy				*Goor		Candy				*Goor						*Goor		
Purneah, 20 miles inland, ...	2	0	5	0	23	0	3	0	4	8	40	0	0	0	0	0	40	0	0	0	0	0	50	0	
Malda, 25 miles inland,..	0	0	5	8	20	0	0	0	5	8	12	8	0	0	5	12	21	0	0	0	5	12	13	0	
Dacca, ...	0	0	4	4	8	0	0	0	4	8	8	8	0	0	4	0	8	4	0	0	4	0	8	8	
Furreedpoor, ...	Date 9	1	Sent to Eur.				Date 7	13	Sent to Eur.				0	0	0	0	0	0	0	0	0	0	0	0	
Tipperah, Comillah, 51 miles S. E. from Dacca,	6	12	7	9	18	8	5	10	7	3	14	15	5	10	0	0	16	7	5	2	0	0	14	6	

* Sugar with its Molasses.

SUGAR—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.												At a small Village.												Remarks.
		May. Seers per Co.'s R.						December. Seers per Co.'s R.						May. Seers per Co.'s R.						December. Seers per Co.'s R.						
		Refined Sugar or Misree.		Ordinary Sugar or Chenee.		Brown Sugar or Muscovado		Refined Sugar or Misree.		Ordinary Sugar or Chenee.		Brown Sugar or Muscovado		Refined Sugar or Misree.		Ordinary Sugar or Chenee.		Brown Sugar or Muscovado		Refined Sugar Misree,		Ordinary Sugar or Chenee.		Brown Sugar or Muscovado		
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Course of the Ganges.	Hooghly, ...	4	1	5	2	7	3	4	9	5	10	7	11	4	2	6	2	8	11	6	10	4	10	9	4	Sugar-cane grow in great abundance in thi district.
	Calcutta, ...	9	7	4	10	Sugar 3	13	3	7	0	0	Sugar 3	11	0	0	0	0	0	0	0	0	0	0	0	0	
	Hidgelee, ...	5	0	0	0	14	9	5	0	0	0	14	9	5	5	0	0	16	0	5	5	0	0	16	0	
	Pooree, ...	Candy 4	4	9	0	16	0	Candy 3	12	8	8	16	0	Candy 4	0	0	0	16	0	Candy 4	0	0	0	16	0	
	Balasore,.........	5	0	20	0	22	14	5	0	22	14	26	10	0	0	0	0	26	10	0	0	0	0	29	0	
Miscellaneous.	Jubbulpore, none made, imported from Mirzapore,																									
	Himalaya Mountains, (Simla,) ..	3	0	3	8	12	0	3	0	3	8	13	0	2	0	2	4	10	0	2	0	2	4	9	0	

SUGAR—*Continued.*

	Names of Places	At the Magistrate's Station, or chief Mart.												At a small Village												Remarks
		May.						December.						May.						December.						
		Seers per Co.'s R.						Seers per Co.'s R.						Seers per Co.'s R						Seers per Co.'s R						
		Refined Sugar or Misree.		Ordinary Sugar or Chenee		Brown Sugar or Muscovado		Refined Sugar or Misree		Ordinary Sugar or Chenee		Brown Sugar or Muscovado		Refined Sugar or Misree		Ordinary Sugar or Chenee		Brown Sugar or Muscovado		Refined Sugar or Misree		Ordinary Sugar or Chenee		Brown Sugar or Muscovado		
		s.	c.	s.	c	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c	s.	c.	s.	c.	s.	c.	
Miscellaneous.	Emparah, (Joudpore,)	1	12	2	1	6	2	1	12	2	1	6	2	1	15	2	3	6	6	1	15	2	3	6	6	
	Neemuch, ...	1	10	2	4	8	0	1	8	2	1	10	0	0	0	0	0	10	0	0	0	0	0	9	0	
	Sultanpore, (Oude,) ..	2	8	5	0	29	9	2	8	5	0	1	10	0	0	0	0	24	0	0	0	0	0	20	0	
	Saugur, ...	0	0	3	4	3	10	0	0	3	6	4	0	0	0	2	12	3	6	0	0	3	0	3	10	
	Malacca, ...	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Gowalparah, (Assam),	4	0	5	0	11	0	4	0	4	10	13	5	0	0	0	0	8	0	0	0	0	0	8	0	

ariety.	
2nd quality	
s. c.	pt a small quantity of Bena-
35 3	to the local consumption a
	ported from Dinagepoor, &c.
	plantains and many descrip-
—	eat abundance. The whole
	d with fruits and vegetables
—	
	wo articles produced in this
	rable in any quantities. In
—	ts are solely dependant on
	for the manufacture of this
35 0	
	wn in this District.
—	
	district has not varied for
4 0	given must be about an an-
	wn in the Mountains, Bas-
	oss, Teearee, Suttee. The
	qualities of the three first
	ge whence the prices were
—	Kotghur.
—	rict.
3 0	part of the country.
—	
5	
—	utub, Woossonah, and Au-
	rately is here given. The
	ade higher than usual from
	three separate years. The
—	ntity sufficient for internal
—	upon the increase, and it
—	e there will be sufficient to
	e scattered nature of the
	ays are great impediments

Remarks.

s here given are rather above the usual average.

food crop of secondary consideration in this District.
wheat, Indian corn, gram, dhal, and some of the
grains are all more extensively grown and consumed
e.
s are considerably above the average rates. The year
of great scarcity in the Western Provinces. A good
rice is grown both in low lands towards Juanpore
mgurh, and also between the Ganges and the Soane,
ar, opium and indigo are the chief products of the

s here given are wholesale ones.

s are above the annual average, for the year (1838)
of great scarcity, the crop having been destroyed
ndations. The lands on the southern side of the
are irrigated—those on the northern are not.
iful year it may make the difference of 5 to 10 seers
upee.
o or three hundred maunds of Safflower might be
yearly in this district at the rate of from 6 to 10
maund of 80lbs. avoirdupoise.
1838 was considered rather a plentiful year at Malda,
rates here given may be regarded as more favourable
several years before.
s are about the average of the last ten years.
y of rice produced in this district is coarse and the
not equal to the consumption in 1838. The price
en is above the average. The great staple commodi-
duced in this district are Indigo, Safflower and Sugar.
ter rapidly on the increase.
s are about the average yearly prices.

TOBACCO.

Table shewing the selling price of Tobacco at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

	Names of Place.	At the Magistrate's Station, or chief Mart.		At a small Village.		Remarks.
		May.	December.	May.	December.	
		s. c. s c.	s. c. s c.	s. c. s. c.	s. c. s. c.	
Course of the Ganges.	Delhi, on the Jumna, 50 miles from the Ganges,	4 to 4¼	4¼ to 4½	6 to 6½	5¼ to 6½	
	Shahjehanpore, 20 miles inland,	6 15 & 7 5	0 0	5 9 & 11 1	0 0	
	Jaunpore, 23 miles inland,	3 to 3 9	3 & 3 9	21 9 to 22 13	19 3 to 20 7	
	Benares,	11 to 8 12	11 to 8 12	0 0	0 0	
	Patna,	0 0	0 0	0 0	0 0	Not dealt in.
	Gyah, 55 miles inland,	12 & 20	10 & 21	10½ & 12	10¼ & 13¼	
	Monghyr,	18 13	15 4	13 5 & 10 7	10 & 8 4	Grown chiefly in the northern parts of this district (Monghyr). The wholesale and retail rates seem to differ about 5 per cent. on most articles.
	Purneah, 20 miles inland,	14 & 16	17 & 21	30 & 33	20 & 22	
	Malda, 25 miles inland,	11 & 16	11 & 16	13 & 20	13 & 29	
	Dacca,	13 4 & 16	13 8 & 18	13 & 15	10 & 12	
	Furreedpore,	16 5 & 20 8	18 7 & 23 9	0 0	0 0	
	Tipperah, (Comillah) 51 miles S. E. from Dacca,	7 3 & 11 4	7 6 & 11 7	9 3	10 4	

TOBACCO—*Continued.*

	Names of Place.	At the Magistrate's Station, or chief Mart.		At a small Village.		Remarks.
		May.	December.	May.	December.	
		s. c. s. c.	s. c. s. c	s. c. s. c	s. c. s. c.	
Course of Ganges.	Hooghly,	8 3 & 13 5	10 4 & 14 5	9 4 & 15 6	11 4 & 17 7	It is cultivated only to a small extent in this district (Hooghly).
	Calcutta,	9 to 20	6 to 12	0	0	
	Hidgelee,	9 6	9 6	10 10	10 10	
	Pooree,	2 10 to 3 6	3 6 to 3 8	8 5 to 7 13	8 5	
	Balasore,	5 to 6 10	4 7 to 6 2	7 4 to 8 14	6 10 to 8 14	
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	4 & 6	9 & 7	6	5 8	
	Himalaya Mountains, (Simla,)	2 & 4	2 & 3 8	1 & 1½	1 & 1¼	
	Emporah, (Joudpore,)	3 1 & 3 9	2 15 & 3 1	3 4 & 3 13	3 1 & 3 4	
	Neemuch,	2 12 & 6	2 8 & 5	2 & 8	2 & 8	
	Sultanpore, (Oude,)	6 12 & 9	6 12 & 9	0	0	
	Saugor,	5 & 5 8	4 4 & 4 8	4 & 4 8	3 4 & 4	
	Malacca	0	0	0	0	
	Gowalparrah, (Assam,)	11 7 & 16	11 7 & 16	32 & 35 9	32 & 35 9	

TIL OR SESAMUM OIL.

Table shewing the selling price of Til or Sesamum Oil at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

Names of Place.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
	May.		December.		May.		December.		
	s.	c.	s.	c.	s.	c.	s.	c.	
Delhi, on the Jumna, 50 miles from the Ganges,	5		5¼		5		6		
Shahjehanpore, 20 miles inland, ...	6	2	0		6	14	0		
Jaunpore, 23 miles inland, ...	0		0		0		0		
Benares,.................	4	6	4	6 to 5 2	3		0		
Patna,.................	2	14	3	13	3	13	0		
Gyah, 55 miles inland, ..	5¼		5½		5¼		5½		
Monghyr, ...	3	11	3	11	0		2		
Purneah, 20 miles inland.	3		3		0		[illegible]		
Malda, 25 miles inland,	3¾		4½		4		3		
Dacca,.................	9		9½		10		10½		
Furreedpoor, ...	11½		10¼		0		0		

Course of the Ganges.

TIL OR SESAMUM OIL—*Continued.*

	Names of Place.	At the Magistrate's Station, or chief Mart.		At a small Village.		Remarks.
		May.	December.	May.	December.	
		s. c.	s. c.	s. c.	s. c.	
Course of Ganges.	Tipperah, Comillah, 51 miles S. E. from Dacca,	0	0	0	0	This oil is not sold separately but mixed with Mustard oil.
	Hooghly, ...	5 2	5 10	4 9¾	4 14	
	Calcutta, ...	0	0	0	0	
	Hidgelee, ...	Not procurable				
	Pooree, ...	5 9 to 4 11	7 to 4 11	0	0	
	Balasore, ...	5	5	0	0	Rarely met with in the small villages of this district (Balasore).
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	5 4	6 4	5 8	4 12	
	Himalaya Mountains, (Simla,)	4	4	3	3	
	Emporah, (Joudpore,) ...	4 1½	4 1½	4 5½	4 5½	
	Neemuch, ...	4	3¾	4 11	4 11	
	Sultanporé, (Oude,)......	3 14	5	0	0	
	Saugor, ...	4 8	4 15	5 10	5 3	
	Malacca,......................	0	0	0	0	
	Gowalparrah, (Assam,) ...	0	0	0	0	

MUSTARD OIL.

Table shewing the selling price of Mustard Oil at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

	Names of Place.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December		May.		December.		
		s.	c.	s	c.	s.	c.	s.	c	
Course of the Ganges.	Delhi,* on the Jumna, 50 miles from the Ganges,……	5		4¾		5		5¼		
	Shahjehanpore, 20 miles inland, ……			not sold.		not sold.				
	Jaunpore, 23 miles inland, ……	6	11	6	14	7	3	7	6	
	Benares,……	6 10 to 6	13	6 10 to 6	13	7 6 to 9		5	8	
	Patna,……	5	11	4	12	7	10			
	Gyah, 55 miles inland,……	7¾		8¼		8		9		
	Monghyr, ……	7	14	8	6	5 to 8	6	8 to 8	6	
	Purneah, 20 miles inland,……	7		9		10		11		
	Malda, 25 miles inland, ……	8		9½		8½		10		
	Dacca,……	9		9	8	10		10½		
	Furreedpore,……	10	12	9	10	0		0		

MUSTARD OIL—*Continued.*

	Names of Place.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		December.		
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Course of Ganges.	Tipperah, Commillah, 51 miles S. E. from Dacca,	8	3	9	3½	8	11¼	8	11¼	This oil is not sold separately, but mixed with Til oil.
	Hooghly,	9	3½	9	11½	10		10	4	
	Calcutta,	9 2 to 8	7	8 to 7	10	0		0		
	Hidgelee,	6	6	6	6	7	2	7	2	
	Pooree,	0		0		0		0		
	Balasore,	8		5		8		8		
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	4		4		6		0		
	Himalaya Mountains, (Simla,)	4		4	8	3		2¾		
	Emporah, (Joudpore,)	5	3	5	2	6	2¼	5	2	
	Neemuch,	4	8	4		4	8	4	8	
	Sultanpore, (Oude,)	8	8	8	15	7	12	7	12	
	Saugor,	3		2	10½	0		0		
	Malacca,	0		0		0		0		
	Gowalparrah (Assam,)	11	8	11	8	16		16		

COTTON.

Table shewing the selling price of Cotton at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

Course of the Ganges.

Names of Place.	At the Magistrate's Station, or chief Mart.		At a small Village.		Remarks.
	May.	December.	May.	December.	
	s. c. s. c.	*s. c. s. c*	*s. c. s. c.*	*s. c. s. c.*	
Delhi, on the Jumna, 50 miles from the Ganges,	4½ to 4¾	4½ to 5	5 to 5½	5½	
Shahjehanpore, 20 miles inland,	3 8 & 3 13		3 13 & 4 3		
Jaunpore, 23 miles inland,	2 13 & 3	2 11 & 3	2 11 & 2 13	2 11 & 2 13	
Benares,	3 6 & 4	3 6 & 4	3 6	0	
Patna,	2 6 & 2 14	2 14 & 3 5	0	0	
Gyah, 55 miles inland,	2 8 & 3 12	1 12 & 2 12	2 4 & 3	1 12 & 2 12	
Monghyr,	2 11	2 10	0	0	
Purneah, 20 miles inland,	3	2 8	0	0	None grown in this district (Monghyr) for exportation. It is brought from Patna and manufactured.
Malda, 25 miles inland,	2 8 & 2 10	2 8 & 2 10	2 10 & 2 12	2 10 & 2 12	
Dacca,	3 4 & 3 8	3 & 3 4	3 4	3	
Furreedpore,	0	0	0	0	None obtainable.
Tipperah, (Comillah,) 51 miles S. E. from Dacca,	3 1	3 1	0	0	Imported from Tipperah Hills. There is but one quality known.

Cotton—*Continued.*

	Names of Place.	At the Magistrâte's Station, or chief Mart.		At a small Village.		Remarks.
		May.	December.	May.	December.	
		s. c. s. c.	s. c. s. c	s. c. s. c.	s. c. s. c.	
Course of Ganges.	Hooghly, ...	2 9 & 3 1	2 11 & 3 5	2 13 & 3 5	2 15 & 3 9	Cotton is cultivated only to a small extent in the Hooghly district.
	Calcutta, ...	2 15 to 2 13	3	0	0	
	Hidgelee, ...	2 8 & 2 10	2 8 & 2 10	2 14	2 14	
	Pooree, ...	0	0	0	0	
	Balasore, ...	2 8 & 4	2 8 & 4	2 14 & 4 7	2 14 & 4 7	
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles, ...	4 & 4 8	4 & 4 8	0	0	Cotton is grown extensively on the banks of all the rivers and of rivulets At and about which nodules of kunkur [nodular limestone] are spread over the land, as a general rule it may be said that the cultivation is not usual on the pure decomposed trap soil. Jubbulpore is a great mart for cotton, so that from the end of March to June, the whole road on to Mirzapore on the Ganges is covered with carts and droves of buffaloes and bullocks. The cotton seed is to be bought for 60, 70, 90 and 80 srs. for the rupee. This year 1839-40 the crop was most bountiful.
	Himalaya Mountains, (Simla,) ...	3 & 4	2½ & 3	2 & 2½	2 & 2¾	
	Emporah, (Joudpore,)	3 9 & 3 14	3 9 & 3 14	3 13 & 4 2	3 13 & 4 2	
	Neemuch, ...	4	4	4 8	4 8	
	Sultanpore, (Oude,)	18	18	0	0	
	Saugor, ...	4 8 & 4 12	4 8 & 4 12	4 8 & 4 12	4 3 & 4 5	
	Malacca, ...	0	0	0	0	
	Gowalparrah, (Assam,)	5 5	5 5	6 10	6 10	

WHEAT.

Table shewing the selling price of Wheat at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—From the relative value of the seer and rupee referred to in this table, see commencement of the returns.

	Names of Place.	At the Magistrate's Station, or chief Mart.								At a small Village.								Remarks.
		May. Srs. pr. C. R.				December. Srs. pr. C. R.				May. Srs. pr. C. R.				December. Srs. pr. C. R.				
		s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	
Course of the Ganges.	Delhi, on the Jumna, 50 miles from the Ganges,	19				12				18				15				
	Shahjehanpore, 20 miles inland, ...	29	12			0				31	2			0				
	Jaunpore, 23 miles inland,	26	5			25	15			22	6	to 23	6	22	6	to 23	6	The food crops of the people of this district (Jaunpore) are various, and constitute their chief industry; but the zillah of Gorruckpore is the only one that exports grain to any great extent. The *village* is the large bazar of Chundwukt, on the Goomty, 30 miles from Jaunpore.
	Benares, ...	16	8	to 16	9	19	13	to 23	1	22	8	to 24	8	24	3			
	Patna, ...	26	8			19				30	5			0				
	Gyah, 55 miles inland, ..	27½				27				27½				27				

WHEAT—*Continued.*

	Names of Place.	At the Magistrate's Station, or chief Mart.								At a small Village.								Remarks.
		May.				December.				May.				December.				
		Srs. pr. C. R.				Srs. pr. C. R.				Srs. pr. C. R.				Srs. pr. C. R.				
		s.	*c.*	*s.*	*c*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Course of the Ganges.	Monghyr, ...	29	6			25	3			40		to 32		30		to 27	8	The wholesale and retail rates seem to differ about 5 per cent. on most articles.
	Purneah, 20 miles inland,	27				24				45				35				
	Malda, 25 miles inland, ...	35				28¾				36¼				30				
	Dacca, ...	26	4			24	8			0				0				
	Furreedpore,.................	None grown.				0				0				0				None grown in this district.
	Tipperah, (Comillah,) 51 miles S. E. from Dacca,	21				0				0				0				Imported for the most part.
	Hooghly, ...	25	10			28	11			28	11			32	12½			
	Calcutta, (Dooela,)	21	5	to 17	12	19	6	to 17	4	0				0				
	Hidgele, ...	17	12			17	12			22	14			22	14			
	Pooree, ...	21				25				0				0				
	Balasore, ...	32				26	10			0				0				

WHEAT—*Continued.*

	Names of Place.	At the Magistrate's Station, or chief Mart.								At a small Village.								Remarks.
		May.				December.				May.				December.				
		Srs pr. C.		R.		Srs. pr. C.		R.		Srs. pr. C.		R.		Srs. pr. C.		R.		
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Miscellaneous.	Jubbulpore, a good metalled road the whole way to Mirzapore on the Ganges, a distance of 239 miles, ...	36	4			28	8			31				27				The export of grain from the valley of the Nurbudda is great, and unless Berar and Ellichpore have a scarcity, the prices in the Hoshungabad District are always lower. Wheat and gram are the staple products of the valley.
	Himalaya Mountains, (Simla,)	12				15				16				15				
	Emporah, (Joudpore,)......	28	11			24	9½			30			12	26			2	
	Neemuch, ...	20	to 22			20½	to	21½		22				18½				
	Sultanpore, (Oude,)........	35	2 to	35	13	32	12	33	5	0				31			3	
	Saugor, ...	29	5			25				28				22			8	
	Malacca,........................	0				0				0				0				
	Gowalparrah, (Assam,) ...	24	10			10				0				0				

BARLEY.

***Table shewing the selling price of Barley at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year* 1838-39.**

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

	Names of Place.	At the Magistrate's Station, or chief Mart.								At a small Village.								Remarks.
		May.				December.				May.				December.				
		Srs. pr. C. R.				Srs. pr. C. R.				Sfs. pr. C. R.				Srs. pr. C. R.				
		s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	
Course of the Ganges.	Delhi, on the Jumna, 50 miles from the Ganges, ...	23¼				13¾				23				15				The food crops of the people of this district (Jaunpore) are very various and constitute their chief industry; but little however is exported, the neighbouring district of Gorruckpore being the only one that exports to any great extent. The *village* whence the prices were obtained was the large bazar of Chundwukt on the Goomty, where grain is cheaper and every thing else dear or not to be had. Barley is the food of the people of the district.
	Shahjehanpore, 20 miles inland, ...	49	2			0				50	8			0				
	Jaunpore, 23 miles inland, ...	36	3			32	2			28		to 30		28		to 29		
	Benares, ...	27	8	to 28	9	28	9	to 30	13	31	15	to 33		31	15			
	Patna,..................	33	3			20	14			37	14			0				
	Gyah, 55 miles inland, ...	37½				35				37¼				34¾				

BARLEY—*Continued.*

	Names of Place.	At the Magistrate's Station, or chief Mart.				At a small Village.		Remarks.
		May. Srs. pr. C. R.		December. Srs. pr. C. R.		May. Srs. pr. C. R.	December. Srs. pr. C. R.	
		s.	*c.*	*s.*	*c.*	*s.* *s.*	*s.* *s.*	
Course of the Ganges.	Monghyr, ...	44	1	34	10	50 to 46	35 to 33	Besides Barley to some extent Oats are a good deal cultivated. Messrs. Crump at Bagwunpore have a cultivation of 400 begahs; Messrs. C. Mackinnon & Co. at Dawlutpore 400 begahs; and Messrs. Buntine at Sultangunge 200 begahs. Three kinds of weights prevail in the district of Monghyr.
	Purneah, 20 miles inland,........ ...	55		32		80	45	
	Malda, 25 miles inland, ...	40		40		45	45	
	Dacca, ...	82	8	80		0	0	The quantity of Barley grown in this district is very trifling, but more than equal to the demand, and to this circumstance must be attributed the very low value it bears in the market.
	Furreedpore,........	81	15	0		0	0	The quantity of barley grown in this district is very trifling. The total amount will not perhaps exceed 500 maunds.

BARLEY—*Continued.*

	Names of Place.	At the Magistrate's Station, or chief Mart.								At a small Village.				Remarks.
		May. Srs. pr. C. R.				December. Srs. pr. C. R.				May. Srs. pr. C. R.		December. Srs. pr. C. R		
		s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	
Course of Ganges.	Tipperah, (Comillah,) 51 miles S. E. from Dacca,	0				0				0		0		None grown or imported.
	Hooghly, ...	26	10			22	9			30	12	26	10	
	Calcutta, ...	22	14 to	21	5	32	to	27	13	0		0		
	Hidgelee, ...	0				0				0		0		Not procurable.
	Pooree, ...	21				19				25	3	25	3	
	Balessore, ...	32				24				0		0		Rarely met with in the small villages of this district.
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	0				0				0		0		Scarcely any grown in this district.
	Himalaya Mountains, (Simla,)	26				28				30		30		
	Emporah, (Joudpore,)....	40	15½			36	14			43	8½	39	7	
	Neemuch, ...	26				28	11½			29		29	12	
	Sultanpore, (Oude,).......	46	70			46	14			38		39	5	
	Saugor, ...	32				21								
	Malacca,................	0				0				0		0		
	Gowalparrah, (Assam,) ...	0				0				0		0		None obtainable.

WHEATEN FLOUR OR OTTAH.

Table shewing the selling price of Wheaten Flour or Ottah at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

	Names of Place.	At the Magistrate's Station, or chief Mart.		At a small Village.		Remarks.
		May.	December.	May.	December.	
		Srs. pr. C. R.	Srs. pr. C. R.	Srs. pr. C. R.	Srs. pr. C. R.	
		s. c. s. c.	*s. c. s. c.*	*s. c. s. c.*	*s. c. s.*	
Course of the Ganges.	Delhi, on the Jumna, 50 miles from the Ganges,...	16	10½	16¼	11	
	Shahjehanpore, 20 miles inland, ...	26 5	0	27 11	0	
	Jaunpore, 23 miles inland,	21 12	21 13	19 8 to 20	19 8 to 20	See remarks under wheat, barley and Indian corn.
	Benares,........................	15 6 to 15 14	17 9 to 20 15	17	17 9	
	Patna,........................	18	14 4	0	0	
	Gyah, 55 miles inland,......	23	23¼	23	23¾	
	Monghyr, ...	24 2	21	20 to 24 8	20 to 21	
	Purneah, 20 miles inland,	21	23	0	0	
	Malda, 25 miles inland, ...	21	20	22	21	
	Dacca, ...	13 4	14	0	0	
	Furreedpore, ...	0	0	0	0	None obtainable.

WHEATEN FLOUR OR OTTAH—*Continued.*

	Names of Place:	At the Magistrate's Station, or chief Mart.								At a small Village.					Remarks.
		May. Srs. pr. C. R.				December. Srs. pr. C. R.				May. Srs. pr. C. R.			December. Srs. pr. C. R.		
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*s.*	*c.*	
Course of Ganges.	Tipperah, (Commillah,) 51 miles S. E from Dacca,	10	12			0				0			0		
	Hooghly, ...	16	6			18	7			18	7		20	8	This is principally supplied from Calcutta.
	Calcutta,.........................	15	4	to 10		17	12	to 10							
	Hidgelee, ...	11	7			11	7			13	10		13	10	
	Pooree, ...	17	1	to 15	12	17	0	to 21		0			0		
	Balasore, ...	10				10				0			0		Rarely met with in the small villages of this district.
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,...	32				26				27			24		Wheat and gram are the staple produce of the valley of the Nerbudda. (See Supplementary table.)
	Himalaya Mountains, (Simla,)	10½				12				16			14		
	Emporah, (Joudpore,) ...	24	9½			20	8			26	2		22	9	
	Neemuch, ...	18		to 18	12	17	8	to 18	6	20			16¼		
	Sultanpore, (Oude,).........	30	2			28	12			25	12		27	2	
	Saugor, ...	19	8	to 24	6	16		to 21		17	to	25	19	12	
	Malacca,.........................	0				0				0			0		
	Gowalparrah, (Assam,)...	16				13	5			0			0		

INDIAN CORN.

Table shewing the selling price of Indian Corn at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

Course of the Ganges.

Names of Places.	At the Magistrate's Station, or chief Mart.								At a small Village.								Remarks.
	May.				December.				May.				December.				
	s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Delhi, on the Jumna, 50 miles from the Ganges,	15	0			24	0			16	0			26	0			
Shahjehanpore, 20 miles inland,...............	34	11			0		0		37	7			0		0		
Jaunpore, 23 miles inland,	None.				26	11			None.				30	0 to	31	3	The food crops of the people of this district (Jaunpore) are very various and constitute their chief industry, but little however is exported. The *village* whence this price was obtained was the large bazar of Chundwukt on the Goomty.
Benares,...............	28	9 to	29	13	28	9 to	29	13	0		0		0		0		
Patna, ...	36	2			47	8			42	12			0		0		
Gyah, 55 miles inland,....	41	4			37	8			36	12			37	8			

INDIAN CORN—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.								At a small Village.						Remarks.
		May.				December.				May.				December.		
		s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	
Course of the Ganges.	Monghyr, ...	46	4 &	42	4	33	0 &	26	0	45	0 &	40	0	35	0	Three kinds of weights prevail in this district, (Monghyr) the Sudder station weight of 84 sicca weight is the one which has been here adopted. The price varies in the manner here given, according as the corn is the burra (large) or chota (small) kind.
	Purneah, 20 miles inland,	50	0			50	0			60	0			60	0	
	Malda, 25 miles inland,...	45	0			40	0			50	0			45	0	
	Dacca, ...	0		0		0		0		0		0		0	0	
	Furreedpore, ...	0		0		0		0		0		0		0	0	None grown.
	Tipperah, (Commillah,) 51 miles S. E. from Dacca,	0		0		0		0		0		0		0	0	Not grown, but imported in small quantities from the Tipperah Hills.
	Hooghly, ...	10	4			12	5			12	5			14	6	
	Calcutta, ...	0		0		0		0		0		0		0	0	
	Hidgelee, ...	None.				0		0		0		0		0	0	Not procurable.
	Pooree, ...	None.				0		0		0		0		0	0	
	Balasore, ...	64	0			0		0		0		0		0	0	

INDIAN CORN—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		December.		
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles, ...	Scarcely any		in this district						
	Himalaya Mountains, (Simla,)	14	0	16	0	None.		None.		None procurable at the mountain village of Kothgur.
	Emporah, (Joudpore,) ...	41	0	36	14	43	1½	39	7	
	Neemuch, ...	30	0	30	5	29	0	31	0	
	Sultanpore, (Oude,)...... ..	31	0	31	10	0	0	0	0	
	Saugor, ...	None.		0	0	0	0	0	0	
	Malacca,......................	0	0	0	0	0	0	0	0	
	Gowalparrah, (Assam,) ...	0	0	0	0	0	0	0	0	None procurable.

LINSEED OIL.

Table shewing the selling price of Linseed Oil at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		December.		
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Course of the Ganges.	Delhi, on the Jumua, 50 miles from the Ganges,	3½	0	3½	0	3¾	0	3¾	0	
	Shahjehanpore, 20 miles inland, ...	Not sold								
	Jaunpore, 23 miles inland,	7	3	6	0	7	13	7	13	
	Benares, ...	6 9 to 6	14	6	14	8	0	6	14	
	Patna, ...	7	10	4	12	8	4	0	0	
	Gyah, 55 miles inland,......	9	0	8	8	9	4	8	12	
	Monghyr, ...	7	8	8	0	12 0 & 5½	0	10	5½	
	Purneah, 20 miles inland,	2	8	3	0	13	0	10	0	
	Malda, 25 miles inland,...	7	0	10	0	8	0	11	0	
	Dacca, ...	0	0	0	0	0	0	0	0	None obtainable.
	Furreedpore,.................	0	0	0	0	0	0	0	0	None obtainable.
	Tipperah, (Comillah,) 51 miles S. E. from Dacca,	2	1	2	1	0	0	0	0	

LINSEED OIL—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		December.		
		s.	c.	s.	c.	s.	c.	s.	c.	
Course of Ganges.	Hooghly,	8	3	8	11	10	4	10	12	
	Calcutta,	0	0	0	0	0	0	0	0	
	Hidgelee,	None.		0	0	0	0	0	0	
	Pooree,	0	0	0	0	0	0	0	0	
	Balasore,	3	1	3	1	0	0	0	0	Rarely met with in the small villages of this District.
Miscellaneous.	Jubbulpore, a good metalled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	5	0	6	0	6	8	6	8	
	Himalaya Mountains, (Simla,)	4	0	4	0	3	0	3	0	The village is the mountain one of Kothgur.
	Emporah, (Joudpore,)	None.		None.		None.		None.		None procurable in this District.
	Neemuch,	None.		0	0	0	0	0	0	
	Sultanpore, (Oude,)	12	0	9	0	0	0	0	0	
	Saugor,	4	8	4	12	5	10	5	0	
	Malacca,	0	0	0	0	0	0	0	0	
	Gowalparrah, (Assam,)	0	0	0	0	0	0	0	0	None procurable.

COCOANUT OIL.

Table shewing the selling price of Cocoanut Oil at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

Course of the Ganges.

Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
	May.		December.		May.		December.		
	s.	*c.*	*s.*		*s.*	*c.*	*s.*	*c.*	
Delhi, on the Jumna, 50 miles from the Ganges,	2	0	1¾	0	1½	0	1½	0	
Shahjehanpore, 20 miles inland, ...	Not sold.				Not sold.				
Jaunpore, 23 miles inland, ...	2	6	2 ·	6	None.		None.		
Benares,................	All imported from Bengal as oil or broken nuts.								
Patna,..................	0	0	0	0	0	0	0	0	Not dealt in.
Gyah, 55 miles inland, ..	4	0	4½	0	4	0	3½	0	
Monghyr, ...	None.		0	0	0	0	0	0	None produced in the District.
Purneah, 20 miles inland,	None.								
Malda, 25 miles inland,	None.								
Dacca,.................	3	4	3	0	0	0	0	0	
Furreedpoor,............	None.		0	0	0	0	0	0	None manufactured.
Tipperah, (Comillah,) 51 miles S. E. from Dacca,	2	9	2	1	0	0	0	0	

COCOANUT OIL—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		December.		
		s.	c.	s.	c.	s.	c.	s.	c.	
Course of Ganges.	Hooghly, ...	4	14	5	2	5	2	5	2	
	Calcutta, ...	4	11 to 4 5	5	5 to 4 13	0	0	0	0	
	Hidgelee, ...	0	0	0	0	0	0	0	0	Not procurable.
	Pooree, ...	7	0	4	0	4	0	0	0	
	Balasore, ...	2	10	2	8	0	0	0	0	Rarely met with in the small villages of this District.
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	None.		0	0	0	0	0	0	None procurable.
	Himalaya Mountains, (Simla,)	2	0	2	0	None.		None.		None procurable at the mountain village of Kothgur.
	Emporah, (Joudpore,)......	None.		0	0	0	0	0	0	None produced in this part of India.
	Neemuch, ...	0	0	0	0	0	0	0	0	
	Sultanpore, (Oude,)..	3	1	3	1	0	0	0	0	
	Saugor, ...	0	9	0	10	0	0	0	0	
	Malacca	0	0	0	0	0	0	0	0	
	Gowalparrah, (Assam,) ...	0	0	0	0	0	0	0	0	None procurable.

SALTPETRE.

Table shewing the selling price of Saltpetre at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

	Names of Places.	At the Magistrate's Station, or chief Mart.								At a small Village.						Remarks.
		May.				December.				May.				December.		
		s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	
Course of the Ganges.	Delhi, on the Jumna, 50 miles from the Ganges,	16	0	&40		16	0	&40	0	40	0			40	0	
	Shahjehanpore, 20 miles inland,	11	1	&30	9	0		0		13	14	&34	11	0	0	
	Jaunpore, 23 miles inland,	10	10			10	10			None.				None.		
	Benares,	13	9	&8	13	13	9	&8	13	12	10			0	0	
	Patna,	8	9			9	8			0		0		0	0	The wholesale and retail rates differ about 5 per cent. on most articles. The prices here given are according as the article is clean or earthy.
	Gyah, 55 miles inland,	6	11			8	0			6	4			5	8	
	Monghyr,	5	0	&3	0	5	0	&3	0	7		&10	7	6 &10	7	
	Purneah, 20 miles inland,	16	0			16	0			25	0			20	0	
	Malda, 25 miles inland,	7	0			7	0			7	8			7	8	
	Dacca,	8	8			9	0			0		0		0	0	
	Furreedpore,	0		0		0		0		0		0		0	0	None manufactured.
	Tipperah, (Comillah,) 51 miles S. E. from Dacca,	0		0		0		0		0		0		0	0	

SALTPETRE—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.		At a small Village.		Remarks.
		May.	December.	May.	December.	
		s. c. s. c.	s. c. s. c.	s. c.	s. c.	
Course of Ganges.	Hooghly,	8 3	9 4	9 4	9 4	
	Calcutta,	7 4 to 6 10	7 4 to 6 0	0 0	0 0	
	Hidgelee,	5 8	5 8	6 0	6 0	
	Pooree,	0 0	0 0	0 0	0 0	
	Balasore,	5 11	5 11	4 7	4 7	
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	None.	0 0	0 0	0 0	
	Himalaya Mountains, (Simla,)	11 0	10 0	9 0	7 0	
	Emporah, (Joudpore,)	None.	None.	None.	None.	None produced in the District.
	Neemuch,	5 0	5 0	5 0	5 0	
	Sultanpore, (Oude,)	24 0	0 0	0 0	0 0	
	Saugor,	6 4	6 2	4 4	4 4	
	Malacca,	0 0	0 0	0 0	0 0	
	Gowalparrah, (Assam,)	4 0	4 10	0 0	0 0	

LINSEED.

Table shewing the selling price of Linseed at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

Names of Places.	At the Magistrate's Station, or chief Mart.								At a small Village.								Remarks.
	May.				December.				May.				December.				
	s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Delhi, on the Jumna, 50 miles from the Ganges,	13	4			13	4			13	0			13	8			
Shahjehanpore, 20 miles inland,	Not sold.								Not sold.								
Jaunpore, 23 miles inland,	33	13			27	5			27	10 to	28	13	21	9			
Benares,	31	15 to	33	0	27	8 to	29	13	34	7			27	8			
Patna,	38	0			23	12			42	12			0	0			
Gyah, 55 miles inland,	35	0			30	0			35	8			31	0			
Monghyr,	34	0			33	0			55	0 & 37½			40	0 & 37½			
Purneah, 20 miles inland,	45	0			40	0			40	0			35	0			
Malda, 25 miles inland,	45	0			57	8			50	0			60	0			
Dacca,	32	0			35	0			37	8			37	8			
Furreedpore,	0	0			0	0			0	0			0	0			None grown.
Tipperah, (Comillah,) 51 miles S. E. from Dacca,	4	2			4	2			0	0			0	0			

Course of the Ganges.

LINSEED—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		December.		
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Course of Ganges.	Hooghly, ...	41	0	43	1	53	5	61	8	
	Calcutta, ...	30 8 to 27	13	0	0	0	0	0	0	
	Hidgelee, ...	None.		0	0	0	0	0	0	
	Pooree, ...	0	0	0	0	0	0	0	0	
	Balasore, ...	0	0	0	0	0	0	0	0	None to be obtained in this District.
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles, ...	17	8	21	0	25	0	25	0	
	Himalaya Mountains, (Simla,) ...	9	0	9	0	None.		None.		None procurable at the mountain village of Kothgur.
	Emporah, (Joudpore,)	None.		None.		None.		None.		None procurable in this Distrist.
	Neemuch, ...	None.								
	Sultanpore, (Oude,)	48	0	45	0	0	0	0	0	
	Saugor, ...	13	8	14	8	18	12	14	2	
	Malacca, ...	0	0	0	0	0	0	0	0	
	Gowalparrah, (Assam,)	0	0	0	0	0	0	0	0	None procurable.

TIL OR SESAMUM SEED.

Table shewing the selling price of Til or Sesamum Seed, at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		December.		
		Srs. pr.	C. R	Srs. pr.	C. R.	Srs. pr.	C. R.	Srs. pr.	C. R.	
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Course of the Ganges.	Delhi, on the Jumna, 50 miles from the Ganges,...	11	8	11	0	12	0	13	0	
	Shahjehanpore, 20 miles inland, ...	18	10	0	0	20	1	0	0	
	Jaunpore, 23 miles inland,	12	11	14	1	None.		None.		
		white	black	white	black					
	Benares,........................	13 2 19	13	13 2 19	13	9	10	0	0	
	Patna,...........................	17	1	18	15	21	11	0	0	
	Gyah, 55 miles inland,......	24	0	32	0	24	4	32	4	
	Monghyr, ...	18	14	16	13	None.		0	0	
	Purneah, 20 miles inland,	25	0	20	0	40	0	35	0	
	Malda, 25 miles inland, ...	15	0	18	0	16	0	20	0	
	Dacca, ...	40	0	42	8	42	0	50	0	
	Furreedpore, ...	40	1	36	7	0	0	0	0	

Til or Sesamum Seed—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May. Srs. pr. C. R.		December. Srs. pr. C. R.		May. Srs. pr. C. R.		December. Srs. pr. C. R.		
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Course of Ganges.	Tipperah, (Comillah,) 51 miles S. E. from Dacca,	23	0	24	9	26	10	30	12	
	Hooghly, ...	30	12	35	14	41	0	46	2	
	Calcutta,......................	30	9	0	0	0	0	0	0	
	Hidgelee, ...	0	0	0	0	0	0	0	0	Not procurable.
	Pooree, ...	0	0	0	0	0	0	0	0	
	Balasore, ...	20	0	17	12	0	0	0	0	Rarely met with in the small villages of this district.
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,...	14	0	17	8	17	8	20	0	
	Himalaya Mountains,(Simla,)	13	0	14	0	None.		None		None procurable at the mountain village of Kothgur.
	Emporah, (Joudpore,) ...	16	6	16	6	17	6½	17	6½	
	Neemuch, ...	8	0	7	0	9	10	9	10	
	Sultanpore, (Oude,).........	27	14	27	14	0	0	0	0	
	Saugor, ...	12	8	14	0	11	4	11	8	
	Malacca,......................	0	0	0	0	0	0	0	0	
	Gowalparrah, (Assam,)...	0	0	0	0	0	0	0	0	None procurable.

GINGER.

Table shewing the selling price of Ginger, at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		December.		
		s.	*c.*	*s.*	*c.*	*s.*	*c.*	*s.*	*c.*	
Course of the Ganges.	Delhi, on the Jumna, 50 miles from the Ganges,	10	0	9	0	7	0	5	0	
	Shahjehanpore, 20 miles inland,	6	15	0	0	6	4	0	0	
	Jaunpore, 23 miles inland,	6	5	6	5	0	0	0	0	
	Benares, (three kinds,)	1 11& 2	3′ & 5	1 11&2	3&514	0	0	0	0	
	Patna,	8	1	9	8	9	8	0	0	
	Gyah, 55 miles inland,	11	0	10	0	11	4	9	12	
	Monghyr, (undried,)	19	3	19	3	13	3	9	14	
	Purneah, 20 miles inland. (green,)	25	0	26	0	45	0	35	0	
	Malda, 25 miles inland,	28	0	28	0	30	0	30	0	
	Dacca,	30	0	28	0	35	0	26	0	
	Furreedpore,	0	0	0	0	0	0	0	0	None produced.
	Tipperah, (Comillah,) 51 miles S. E. from Dacca,	6	9	6	11	0	0	0	0	

GINGER—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		December.		
		s	c.	s	c.	s.	c.	s.	c.	
Course of Ganges.	Hooghly, ...	10	4	10	4	11	4	11	4	
	Calcutta, ...	14 to 15	0	8 to 7	5	0	0	0	0	
	Hidgelee, ...	11	5	11	5	13	5	13	5	
	Pooree, ...	3	4	3	4	2	10	2	10	
	Balasore, ...	6	10	5	11	0	0	0	0	Rarely met with in the small villages of this district.
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	0	0	0	0	0	0	0	0	
	Himalaya Mountains, (Simla,)	8	0	9	0	None.		None.		None procurable at the mountain village of Kothgur.
	Emporah. (Joudpore,)....	None.		0	0	0	0	0	0	
	Neemuch, ...	2	0	2	0	2	0	2	0	
	Sultanpore, (Oude,)......	6	3&7½	0	0	0	0	0	0	
	Saugor, ...	5	4	11	0	4	0	7	0	
	Malacca, ...	0	0	0	0	0	0	0	0	
	Gowalparrah, (Assam,) ..	0	0	0	0	0	0	0	0	None procurable.

MUSTARD SEED.

Table showing the selling price of Mustard Seed, at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the seer and rupee referred to in this table, see commencement of the returns.

	Names of Places.	At the Magistrate's Station, or chief Mart.								At a small Village.								Remarks.
		May. Srs. pr. C. R.				December. Srs. pr. C. R.				May. Srs. pr. C. R.				December. Srs. pr. C. R.				
		s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	s.	c.	
Course of the Ganges.	Delhi, on the Jumna, 50 miles from the Ganges,	14				13				15				16				
	Shahjehanpore, 20 miles inland,	13			13	0			0	12			7	0			0	
	Jaunpore, 23 miles inland,	30			14	26½				27	10 to	29	0	19	to	20		
	Benares,	26	6 to	27	8	23	1 to	25	4	31	15 to	33	0	27			8	
	Patna,	37			1¼	28			8	47			6	0			0	
	Gyah, 55 miles inland,	26½				34¼				26½				24¼				
	Monghyr,	42				46			3	35	to	55	0	40	to	50		
	Purneah, 20 miles inland,	32				40				50				55				
	Malda, 25 miles inland,	38				47				40				50				
	Dacca,	37			8	40				37			8	50				
	Furreedpoor,	23			7	31			4	0			0	0			0	
	Tipperah, (Comillah,) 51 miles S. E. from Dacca,	32			12½	41				0			0	0			0	

Mustard Seed—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May.		December.		May.		December.		
		Srs. pr. C. R.		Srs. pr. C. R.		Srs. pr. C. R.		Srs. pr. C. R.		
		s.	c.	s.	c.	s.	c.	s.	c.	
Course of Ganges.	Hooghly,	41	0	43	8½	43	½	46	2	
	Calcutta,	36 3 to 29	2	37 5 to 31	13	0	0	0	0	
	Hidgelee,	23	0	23	0	27	13	27	13	
	Pooree,	0	0	0	0	36	6	42 to 31	6	
	Balasore,	26	10	22	14	40	0	40	0	
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	12	0	12	0	0	0	0	0	
	Himalaya Mountains, (Simla,)	15	0	16	0	None.		None.		None procurable at the mountain village of Kothgur.
	Emporah, (Joudpore,)	25	10	24	9½	27	3	26	2	
	Neemuch,	10	0	10	0	10	0	10	0	
	Sultanpore, (Oude,)	34	1	34	1	0	0	0	0	
	Saugor,	14	0	11	0	14	0	12	0	
	Malacca,	0	0	0	0	0	0	0	0	
	Gowalparrah, (Assam,)	49	0	50	0	100	0	100	0	

RUM.

Table, showing the selling price of Rum at a chief Mart and an obscure Village conjointly, along the line of the Gangetic Provinces from Hurdwar to the Sea, at half-yearly intervals, during the year 1838-39.

N. B.—For the relative value of the rupee referred to in this table, see commencement of the returns.

	Names of Places.	At the Magistrate's Station, or chief Mart.		At a small Village.		Remarks.
		May. R. pr. Bottle.	December. R. pr. Bottle.	May. R. pr. Bottle	December. R. pr. Bottle.	
Course of the Ganges.	Delhi, on the Jumna, 50 miles from the Ganges,					
	Shahjehanpore, 20 miles inland,......................	Not sold.				
	Jaunpore, 23 miles inland,	None.	None.	None.	None.	
	Benares,......................	0 0	0 0	0 0	0 0	
	Patna,..........................	0 0	0 0	0 0	0 0	
	Gyah, 55 miles inland,..	None.				Not dealt in.
	Monghyr, ...	0 0	0 0	0 0	0 0	

Rum—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.		At a small Village.		Remarks.
		May.	December.	May.	December.	
		R. pr. Bottle.	R. pr. Bottle.	R. pr. Bottle.	R. pr. Bottle.	
Course of the Ganges.	Purneah, 20 miles inland,	0 0	0 0	0 0	0 0	
	Malda, 25 miles inland,	None.				
	Dacca, ...	0 0	0 0	0 0	0 0	
	Furreedpore,.................	0 0	0 0	0 0	0 0	No price in the District, all sent to Europe.
	Tipperah, (Comillah,) 51 miles S. E. from Dacca,	0 0	0 0	0 0	0 0	None manufactured.
	Hooghly, ...	2/4 gallons	2/2 gallons	2/4 gallons	2/2 gallons	
	Calcutta, ...	0 0	0 0	0 0	0 0	
	Hidgelee, ...	None.	0 0	0 0	0 0	
	Pooree, ...	0 0	0 0	0 0	0 0	
	Balasore, ...	0 0	0 0	0 0	0 0	None procurable in this district.

RUM—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.		At a small Village.		Remarks.
		May.	December.	May.	December.	
		R. pr. Bottle.	R. pr. Bottle.	R. pr. Bottle.	R. pr. Bottle.	
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	None.				
	Himalaya Mountains, (Simla,) …………………	None.	None.	0 0	0 0	None procurable.
	Emporah, (Joudpore,)……	None.				
	Neemuch, ………………	None.				
	Sultanpore, (Oude,)………	0 0	4, 10 and 40 Bottles per Rupee of 41¼ pice.			
	Saugor, ………………………	None.				
	Malacca ………………………	0 0				
	Gowalparrah, (Assam,) …	0 0				None procurable.

Remarks.

ore District.
tance in this District. No cocoons are
ittle silk manufactured of any kind.
cotton cloth are made to some extent,
weaving villages in Azimghur than in

ot-wind region.

ed in the Behar Zillah.
oduce the silk used for Baugalpore
nd in any quantity in this District.
eared, nor is there any manufactory of
te mulberry tree thrives well.

the Factory for cocoons and only those
o are unable to raise money elsewhere,
ldom deliver above a fourth part of what
of the worst description, reserving the
he bazar, which is wound off in the peo-
o *Gongroo* silk, for the manufacture of

ion cultivated in the District of Dacca.
District.

the District.

Rum—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.		At a small Village.		Remarks.
		May.	December.	May.	December.	
		R. pr. Bottle.	R. pr. Bottle.	R. pr. Bottle.	R. pr. Bottle.	
Miscellaneous.	Jubbulpore, a good metaled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	None.				
	Himalaya Mountains, (Simla,) …………………	None.	None.	0 0	0 0	None procurable.
	Emporah, (Joudpore,)……	None.				
	Neemuch, ………………	None.				
	Sultanpore, (Oude,)………	0 0	4, 10 and 40 Bottles per Rupee of 41¾ pice.			
	Saugor, ………………………	None.				
	Malacca ………………………	0 0				
	Gowalparrah, (Assam,) …	0 0				None procurable

Remarks.
›ore District. rtance in this District. No cocoons are little silk manufactured of any kind. cotton cloth are made to some extent, weaving villages in Azimghur than in
›ot-wind region.
›d in the Behar Zillah. oduce the silk used for Baugalpore nd in any quantity in this District. reared, nor is there any manufactory of te mulberry tree thrives well.
the Factory for cocoons and only those ho are unable to raise money elsewhere, ldom deliver above a fourth part of what of the worst description, reserving the he bazar, which is wound off in the peo- to *Gongroo* silk, for the manufacture of
ion cultivated in the District of Dacca. District.
the District.

Hides—*Continued.*

	Names of Places.	At the Magistrate's Station, or chief Mart.				At a small Village.				Remarks.
		May. Rs. per Piece.		December. Rs. per Piece.		May. Rs. per Piece.		December. Rs. per Piece.		
		Bull.	*Buffalo.*	*Bull.*	*Buffalo.*	*Bull.*	*Buffalo.*	*Bull.*	*Buffalo.*	
Course of Ganges.*	Hooghly,	1 0	0	1 0	0	1 0	0	1 0	0	
	Calcutta,	1 2 to 2	0	1 3 to 2	2	0	0	0	0	
	Hidgelee,	None.		0	0	0	0	0	0	
	Pooree,	0	0	0	0	0	0	0	0	
	Balasore,	1	& 0 12	1	& 0 12	0	0	0	0	According as they may happen to be cow or buffalo hides.
Miscellaneous.	Jubbulpore, a good metalled road the whole way to Mirzapore on the Ganges, a distance of 239 miles,	1 10	8 0	0	0	0	0	0	0	
	Himalaya Mountains, (Simla,)	None.		None.		None.		None.		None procurable.
	Emporah, (Joudpore,)	2 8	0	2 8	0	2 8	0	2 8	0	
	Neemuch,	2 12	0	2 8	0	2 0	0	2 0	0	
	Sultanpore, (Oude,)	1 2	0	1 2	0	0	0	0	0	
	Saugor,	1 12	0	1 4	0	1 0	0	1 0	0	
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ART. XX.—*On the existing state of tree and forest cultivation in the sugar district of Azimghur, and measures for overcoming the scarcity. By Henry Carre Tucker, Esq.*

[Read at the Meetings of the Society on the 8th April and 11th Nov. 1840.]

With reference to the accompanying translation of a proclamation in the Azimgurh Ukhbar I should feel much gratified if the Agricultural Society of India would add a gold and silver medal to the premiums of 200 and 100 Rs. therein offered to the individual who should make the most extensive plantations this year, of which the young trees should be well and healthy by the end of the hot season of 1841. The object is one of great public interest and utility in this part of the country—as the jungles and groves are being so fast destroyed, that unless means are taken to encourage artificial planting, the lands will be much deteriorated. I look for your support with the parent Society in obtaining the grant of the two medals—and should they be sanctioned kindly inform me, that I may have the circumstance made known throughout the zillah—as the competition, and extent of plantations, will be thereby greatly increased.

(Signed) H. TUCKER,
Secy. to Azimgurh A. and H. Society.

Free Translation of Advertisement.

1. It has been to me a source of constant regret, and of frequent remonstrance, with the zumeendars of this district, that owing to the settlement of boun-

dary disputes, and the demand for wood by the sugar boilers, the jungles and old trees should be cut down, without new plantations being made in their stead. My opinions on this subject have been completely confirmed by the work on the Statistics of the neighbouring part of Oudh, written by Dr. Donald Butler, and printed by order of Government. That gentleman writes—" These remnants of the sylvan vesture, which adorned the country,—which warded off by its shade, and immense transpiration, the fierce rays of the sun, and which thereby,—as well as through the direct deposition of dew dropping from its leaves,—maintained an almost perpetual verdure on the ground, and gave origin to frequent springs of running water,—may be expected gradually to disappear; thus completing the slow, but certain process, by which India, like all other semi-tropical countries, (such as central Spain, southern Italy, and the western territory of the United States,) has its green plains,—no longer capable of entangling and detaining water in the meshes of an herbaceous covering,—ploughed into barren ravines, by its sudden and violent, though now short-lived rains,—its mean temperature, and its daily and annual range of temperature augmented,—its springs and perennial streamlets dried up,—the distance of water from the earth's surface increased,—and its rain falls, and the volume of its rivers diminished. Artificial planting, also, which might, if carried on systematically, arrest the current deterioration of climate, is on the decline."—(page 9.)

2. It is unnecessary for me to go into the proofs of all these effects. Most of them are obvious, and

have been the subject of your own frequent remark, though you never penetrated the principal cause. You all see and feel that the country is drier than it was; that in the parts where there are no trees, the lands are usually less productive, and cut up and rendered useless by ravines; that the cold weather and nights are colder, whilst the hot weather and days are warmer; that hoar frost is of much more frequent occurrence; that the average annual fall of rain is less, and the rain at Christmas and the chota bursat (small rains) uncertain and irregular; that places where grass formerly grew luxuriantly, and tall enough for thatch, now scarcely afford a scanty pasturage for cattle; that the number of cattle kept is hardly a tenth of what it used to be, and the breed deteriorated by bad and insufficient food; that wells have now to be dug deeper than formerly: and that the rivers seldom or never rise now to their old water marks. All this you yourselves see and feel, and there is no doubt but that the principal proximate cause is the rapid removal of all the jungles and old trees, and the non-plantation of young trees in their stead, from the double motive, of receiving the present high price of firewood from the sugar-boilers, and extending as much as possible the malgoozarree area. This covetousness, however, will defeat its own object—the cultivated area may be increased, but without a certain proportion of wood-land, its productiveness will diminish.

3. I trust therefore, that your eyes being now opened, you will in future let the numbers of young trees planted at least equal the number of the old ones cut down.

4. The great and good Oberlin made every child in his schools plant and rear at least two trees; and thus in a short time the Bans de la Roche, a district naturally bare and rocky, was insensibly covered with luxuriant plantations. In Basle there is also an excellent custom. Six trees are planted on occasion of every marriage, and two at the birth of every child. An abundant supply of trees is thus systematically obtained. There is no reason why it should not be the same here. On the contrary, such a custom would soon assimilate with your habits, and become a beneficial national *dustoor* (custom.)

5. I hope the Government officials and influential zumeendars will shew an example in this respect, and introduce the custom at once, as well themselves, as by encouraging and assisting even the poorest ryots to plant trees at marriages and births, around their cottages, by the sides of roads, or in other waste places. The putwarries (land Stewards) will give a note of all trees so planted in their respective villages, at the foot of their annual papers.

6. To encourage the formation of plantations on a large scale, rewards of 200 and 100 rupees respectively, will be given to those who shall have the greatest number of thriving young trees in the zillah, either planted out by the side of roads, or in regular plantations, at the end of May 1841. It will be necessary for competitors to produce certificates of the number of trees from the tuhseeldars (Collectors of land tax) of the pergunnahs in which they are planted.

7. This notice to be published in the Akhbar, (Newspaper) and an additional number of copies of it issued for more general information."

"P. S. As I hear that Roshun Allee thanadar (Police officer) of Mahal, is going to be married, he will have the goodness to act upon the Basle custom at once, by planting six trees, in as conspicuous a place as possible, near the thanah (Police office)."

Would it not be an object worthy of your Society to take up the subject of planting trees, and cultivating artificial grasses? The *Friend of India* is doing what he can—but by pressing the subject on the attention of all your numerous members throughout the country, you might effect a vast quantity of good. There is not a shadow of a doubt that in all this part of the country, jungles have almost totally disappeared—and the mangoe topes are fast following the example. I have done all I could to encourage planting, and through Mr. Mather's, of Mirzapoor, valuable Hindustani paper, the *Khair Khwáh i Hind*, have shewn the necessity to other zillahs. I have also had Hindustani exhortations on the subject, extensively distributed throughout this and the neighbouring districts, and have had the pleasure to hear from different quarters, of the good done in exciting individuals to plant—but I could wish that all the different members of your Society in their several spheres, took the same pains to maintain a good supply of wood in the country, with reference to its bearing, both on the climate and soil, and upon the price of the manufacture of *sugar*.

If you would only give some general and powerful stimulus to all your members on this head, you would do a world of good. *Now* is the time for preparing both the land and the seedlings. I have had several thousand saul seedlings brought from the Goruckpoor forest, as an experiment to see if they will thrive here.

There is no hope of a sufficient supply of *coal* in this neighbourhood for many a long year to come; and in the mean time the price of firewood will enhance greatly that of sugar, and tell powerfully on the profits of the sugar speculators, who are bound by every tie of interest to use every effort for the preservation and increase of the supply of wood.

It is also a matter of mathematical demonstration, that with the destruction of the jungles, there is nothing left for the village cattle to eat. The whole quantity of boosa (chopt fodder) is insufficient—and much too expensive. What then are the owners of cattle to do? What do they do? They do nothing, but allow the cattle to die off from starvation—and those that remain are poor, miserable, half-starved things, good for little. This want of food, greatly increases trespass. Hunger has no law—and the starving cattle, either with or without the connivance of their masters, *will* trespass on, and, as far as they can, devour the crops of the cultivated fields. This is a great injury to the cultivator, which requires two remedies.

1st. A good and distinct law of trespass.

2nd. That the natives should be induced to plant a sufficient quantity of Guinea grass, turnips, &c. for the due nourishment and support of their own cattle. I do all I can in my own zillah, but the natives have the greatest repugnance to *waste* good cultivated land on mere food for cattle. Their ancestors never did so, why should they? They will not see the different state of the country, which is now one sheet of cultivation, instead of being at least one-half covered with jungle. It would be well worth your while to pay some attention to this subject. It is only by the united vigorous efforts of European gentlemen in different parts of the country that any extensive good will be effected. The law of trespass is being fully discussed in the different journals, and must lead to the adoption of some general fixed rules of procedure by Government.

It would do good also, if you made the Basle custom generally known. Here the natives have adopted it *con amore*—and invariably now plant two trees at the birth of every boy, and six at every marriage. On the Queen's marriage I had six trees planted in a circle close to every police office in the district, under a display of fireworks from the centre of the plot, and a discharge of the burcundauzes' matchlocks. This made a noise at the time, and as every one who sees the six trees planted in a circle asks what it means, he gets the answer that, "They are the Padshah Begum's marriage trees according to Basle custom"—and that if she, this Sircar (the Government), conform to the custom, how much more should they.

The six trees at the Cutcherry are just in front of my window, and I often see natives standing beside the cricular plot, and holding a deliberation regarding it, and perhaps applying to a chipprassy to solve their doubts as to the mystery—the more so, as there is a wooden stand in the centre, from which the fireworks were discharged. All this helps to make the custom known and popular. I wish much that as Secretary, you would stimulate your members and other European gentlemen to aid in establishing this, or a similar custom throughout the country. The zumindars (Land-holders) will seldom object to their tenantry planting these trees by the roads, or in odd corners, if it is clearly explained to them, that they will have the half (or whatever may be the custom of the particular part of the country) of the wood, when the trees dry up, and are cut down. At least I have had no difficulty or complaints here.

ART. XXI.—*Notice of the Hemp Cultivation in the Nepaul State, with specimens. By B. H. Hodgson, Esq., British Resident at the Court of Nepaul.*

[Read at the Meeting of August 1840.]

The season for sowing Bhang seed in Nepaul is from Chyett to Bysack*.

Damp soils, comprising black earth, are fittest for this crop. Before ploughing the field, sufficient manure is to be sprinkled over it, then completing the work of the plough, the seeds are to be sprinkled, and having broken the clods into dust, the field is to be made even.

At seven or eight days after sowing the seeds, the plants come up, but their rapidity of growth and their size and strength depend on the abundance of the rains or artificial watering. If the plants be very thick, they must be thinned, so as to stand three inches distance from each other. They flower and fruit in Sawun*; and at the beginning of Bhadoon† are in their full growth; but while yet succulent and in flower they are to be cut, with exception of some seed plants which are not to be reaped till October. It is the bark of the young but full grown or Sawun (July) plants, which is soft, that is used for making Bhangela. That of the old or October plants is hard and not suitable for manufacture.

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* March to April.—*Sec.*

After the plants have been cut off at the ground, they must be placed in the sun for eight or ten days, or until they be dried sufficiently. They must then be steeped in water for three days, and on the fourth day the plants must be taken out of the water and peeled. The peelings are to be washed and put in the sun; and when quite dried, they are ready for manipulation. They are then to be torn into thin threads with the nails of the hands: next twisted with a spinning-wheel (Tikuli), and when the threads are thus prepared they are to be boiled with ashes of wood and water in a pot, for four hours, and to be washed again for the purpose of whitening. This is the way of preparing Bhangela thread, out of which blankets are woven.

One‡ mana of seed is sufficient for a Ropini of land§ which produces ten or twelve loads of bhang. Hemp grows equally well on slopes or flats, and near the tops as well as on the sides of the mountains, if not too low. But a moist rich soil is indispensable. The plant attains to a height of eight to ten feet, and should be cut when the flower is falling and the seed forming.

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* July.—*Sec.*

† August.—*Sec.*

‡ Half a kucha seer.

§ One-fifth of a Badshahi bigah.

ART. XXII.—*Public Spirit among the Hindoo Race as indicated in the flourishing condition of the Jubbulpore District in former times, with a sketch of its present state—also on the great importance of attending to Tree Cultivation and suggestions for extending it. By Major Sleeman, late in charge of the Jubbulpore District.*

[Read at the Meeting of the Society on the 8th Sept. 1841.]

My tents are now pitched where they have often before been, on the verge of a very large and beautiful tank in a fine grove of mangoe trees, and close by a handsome temple. There are more handsome temples and buildings for accommodation on the other side of the tank, but they are gone sadly out of repair. The bank all around this noble tank is beautifully ornamented by fine banyan and peepul trees, between which and the water's edge intervene numerous clusters of the graceful bamboo. These works were formed about eighty years ago by a respectable agricultural capitalist who resided at this place, and died about twenty years after they were completed. No relation of his can now be found in the district; and not one in a thousand of those who drink of the water or eat of the fruit, knows to whom they are indebted. There are around the place some beautiful bowlies, or large wells with flights of stone steps from the top to the water's edge, imbedded in clusters of beautiful trees. They were formed about the same time for the use of the public by men whose grandchildren have descended to the grade of cultivators of the soil, or belted attendants upon the present Native Collectors, without the means of repairing any of the injury that time is inflicting upon any of these magnificent works. Three or four young peepul trees have begun to spread their delicate branches and pale green leaves rustling in the breeze from the dome of this fine temple, which these infant Herculeses hold in their deadly grasp and doom to inevitable destruction: Pigeons deposit the seeds of the peepul tree, on which they chiefly feed, in the crevices of buildings.

No Hindoo dares, and no Christian or Muhomedan will condescend, to lop off the heads of these young trees, and if they did, it would only put off the evil and inevitable day, for such are the vital powers of the roots of these trees, when they have once penetrated deeply into a building, that they will send out these branches again, cut them off as often as you may, and carry on their internal attack with undiminished vigour.

No wonder that superstition should have consecrated this tree, delicate and beautiful as it is, to the gods. The palace, the castle, the temple, and the tomb, all those works which man is most proud to raise, to spread and to perpetuate his name, crumble to dust beneath her withering grasp. She rises triumphant over them all in her lofty beauty, bearing high in air amidst her light green foliage fragments of the wreck she has made, to show the nothingness of man's greatest efforts.

While sitting at my tent door looking out upon this beautiful sheet of water, and upon all the noble works around me, I thought of the charge, so often made against the people of this fine land, of the total want of *public spirit* among them, by those who have spent their Indian days in the busy courts of law, and still more busy commercial establishments of our great metropolis.

If by the term public spirit be meant a disposition on the part of individuals to sacrifice their own enjoyments, or their own means of enjoyment for the common good, there is perhaps no people in the world among whom it abounds so much as among the people of India. To live in the grateful recollections of their countrymen for benefits conferred upon them in great works of ornament and utility is the study of every Hindoo of rank and property. Such works tend, in his opinion, not only to spread and perpetuate his name in this world, but, through the good wishes and prayers of those who are benefitted by them, to secure the favor of the deity in the next.

According to their notions every drop of rain water or of dew that falls to the ground from the green leaf of a fruit-tree, planted by them for the common good, proves a refreshing draught for their souls in the next. When no descendant remains to pour the funeral libation in their name, the water from the trees that they have planted for the public good is destined to supply its place. Every thing judiciously laid out to promote the happiness of their fellow-creatures will, in the next world, be repaid to them tenfold by the deity.

In marching over the country in the hot season we every morning find our tents pitched on the green sward amid beautiful groves of fruit trees, with wells of pucka (brick or stone) masonry, built at great expense and containing the most delicious water; but how few of us ever dream of asking at whose cost the trees that afford us and our followers such agreeable shade were planted, or the wells that afford us such copious streams of fine water in the midst of dry arid plains were formed—we go on enjoying all the advantages which arise from the *noble public spirit* that animates the people of India to benevolent exertions, without once calling in question the truth of the assertion of our metropolitan friends, that "the people of India have no public spirit!".

Manmare, a respectable merchant of Mirzapore, who traded chiefly in bringing cotton from the valley of the Nurbudda and Southern India through Jubulpore to Mirzapore, and in carrying back sugar and spices in return, learning how much travellers on this great road suffered from the want of water near the Hilleea pass, under the Vindeya range of Hills, commenced upon a work to remedy the evil in 1822. Not a drop of wholesome water was to be found within ten miles of the bottom of the pass, where the laden bullocks were obliged to rest during the hot months, when the greatest thoroughfare always took place. Manmare commenced upon a large tank and garden, and had laid out about twenty thousand rupees in the work when he died. His son, Lulla Manmare, completed the work soon after his father's death at a cost of eighty thousand rupees more, that travellers might enjoy all the advantages that his good old father had benevolently intended for them. The tank is very large, always full of fine water the dryest part of the dry season, with flights of steps of cut freestone from the water's edge to the top all round. A fine garden and shrubbery with temples and buildings for accommodations, are attached with an establishment of people to attend and keep them in order.

All the country around this magnificent work was a dreary solitude—there was not a human habitation within many miles on any side. Tens of thousands who passed this road every year were blessing the name of the man who had created it where it was so much wanted, when the new road from the Nerbudda to Mirzapore was made by the British Government to descend some ten miles to the north of it. As many miles were saved in the distance by the new cut, and the passage down made comparatively easy at great cost, travellers forsook the Hilleea road, and poor Mannare's work became comparatively useless! I brought the work to the notice of Lord William Bentinck, who in passing Mirzapore some time after, sent for the son, and conferred upon him a rich dress of honor, of which he has ever since been extremely proud.

Hundreds of works like this are made every year for the benefit of the public by benevolent and unostentatious individuals, who look for their reward, not in the applause of newspapers and public meetings, but in the grateful prayers and good wishes of those who are benefitted by them; and in the favor of the deity in the next world, for benefits conferred upon his creatures in this[*].

What the people of India want is not public spirit, for no men in the world have more of it than the Hindoos; but a disposition on the part of private individuals to combine their efforts and means in effecting great objects for the public good. With this disposition they will be, in time, inspired under our rule, when the enemies of all settled Governments may permit us to divert a little of our intellect and our revenue from the duties of war to those of peace.

In the year 1829 while I held the civil charge of the district of Jubbulpore, in this valley of the Nerbudda, I caused an estimate to be made of the public works of ornament and utility that it contained. The population of the district at that time amounted to five hundred thousand souls, distributed among four thousand and fifty-three occupied towns, villages and hamlets. There were one thousand villages more which had formerly been occupied, but were then deserted. There were two thousand two hundred and eighty-eight tanks, two hundred and nine bowlies, or large wells, with flights of steps extending from the top down to the water when in its lowest stage; fifteen hundred and sixty wells lined with brick and stone, cemented with lime, but without stairs—three hundred and sixty Hindoo temples, and twenty-two Muhomedan mosques. The estimated cost of these works in grain at the present price, that is the quantity that would have been consumed had the labor been paid in kind at the rate common day-labor is now paid in kind, was eighty-six lacks, sixty-six thousand and forty-three rupees (86,66,043), £866,604-0-0 sterling.

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[*] Within a few miles of Ghosulpore at the village of Tulwa, which stands upon the old high road leading to Mirzapore, is a still more magnificent tank with one of the most beautiful temples in India, all made two or three generations ago at the expense of two or three lacks of rupees for the benefit of the public by a very worthy man who became rich in the service of the former Government. His descendants, all save one, now follow the plough; and that one has a small rent-free village held on condition of appropriating the rents to the repair of the tank.

The laborer was estimated to be paid at the rate of about two thirds the quantity of corn that a laborer paid in kind would get in England, and corn sells here at about one third the price that it fetches in average seasons in England. In Europe these works would therefore, supposing the labor equally efficient, have cost at least four times the sum here estimated; and such works formed by private individuals for the public good without any view whatever to return in profits, indicates a very high degree of *public spirit.*

The whole annual rent of the lands of this district amounts to about six hundred and fifty thousand rupees a year, (£65,000-0-0 sterling,) that is five hundred thousand demandable by the Government, and one hundred and fifty thousand by those who hold the lands at lease immediately under Government, over and above what may be considered as the profits of their stock as farmers. These works must, therefore, have cost about thirteen times the amount of the annual rent of the whole of the lands of the districts; or the whole annual rent for above thirteen years!

But I have not included the groves of mangoe and tamarind and other fine trees with which the district abounds. Two-thirds of the towns and villages are imbedded in fine groves of these trees, mixed with the banyan* and the peepul†. I am sorry they were not numbered; but I should estimate them at three thousand; and the outlay upon a mangoe grove, is on an average, about four hundred rupees.

The groves of fruit trees planted by individuals for the use of the public, without any view to a return in profit, would, in this district, according to this estimate have cost twelve lacks more; or about twice the amount of the annual rent of the whole of the lands. It should be remarked that the whole of these works had been formed under former Governments: ours was established in the year 1817.

The Upper Dooab and the Delhi territories were denuded of their trees in the wars that attended the decline and fall of the Muhomedan Empire, and the rise and progress of the Seiks, Jats, and Marhattas in that quarter. These lawless freebooters soon swept all the groves from the face of every country they occupied with their troops, and they never attempted to renew them or encourage the renewal. We have not been much more sparing; and the finest groves of fruit trees have everywhere been recklessly swept down by our Barrack-masters to furnish fuel for their brick kilns; and I am afraid little or no encouragement is given for planting others to supply their place in those parts of India where they are most wanted.

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* Ficus Indica.—H. H. S. † Ficus Religiosa.—H. H. S.

We have a regulation authorizing the lessee of a village to plant a grove in his grounds, but where the settlements of the land revenue have been for short periods, as in all Upper and Central India, this authority is by no means sufficient to induce them to invest their property in such works. It gives no sufficient guarantee that the lessee for the next settlement shall respect a grant made by his predecessors; and every grove of mangoe trees requires outlay and care for at least ten years. Though a man destines the fruit, the shade and the water for the use of the public, he requires to feel, that it will be held for the public in his name, and by his children and descendants; and never exclusively appropriated by any man in power for his own use.

If the lands were still to belong to the lessee of the estate under Government, and the trees only to the planter and to his heirs, he to whom the land belonged might very soon render the property in the trees of no value to the planter or his heirs.

If Government wishes to have the Upper Dooab, the Delhi, Muthra, and Agra districts again enriched and embellished with mangoe groves, they will not delay to convey this feeling to the hundreds, nay thousands who would be willing and anxious to plant them upon a single guarantee, that the lands upon which the trees stand shall be considered to belong to them and their heirs as long as these trees stand upon them. That the land, the shade, the fruit and the water will be left to the free enjoyment of the public we may take for granted, since the good which the planter's soul is to derive from such a work in the next world, must depend upon their being so; and all that is required to be stipulated in such grants is, that mangoe, tamarind, peepul or bur trees, at the rate of twenty-five the English acre shall be planted and kept up in every piece of land granted for the purpose; and a well of pucka masonry shall be made for the purpose of watering them in the smallest as well as in the largest piece of ground granted and kept always in repair.

If the grantee fulfil the conditions he ought, to cover part of the expense, to be permitted to till the land under the trees till they grow to maturity and yield their fruit—if he fails, the lands, having been declared liable to resumption, should be resumed. The person soliciting such grants should be required to certify in his application that he had already got the sanction of the present lessee of the village in which he wishes to have.his grove, and for this sanction he would of course have to pay the full value of the land for the period of his lease. When his lease expires the land in which the grove is planted would be excluded from the assessment; and when it is considered that every good grove must cost the planter more than fifty times the annual rent of the land, Government may be satisfied, that they secure the advantage to their people at a very cheap rate!

Over and above the advantage of fruit, water and shade, for the public, these groves tend much to secure the districts that are well studded with them, from the dreadful calamities that, in India, always attend upon deficient falls of rain in due seasons. They attract the clouds, and make them deposit their stores in districts that would not otherwise be blessed with them; and hot and dry countries denuded of their trees, and by that means deprived of a great portion of that moisture to which they had been accustomed, and which they require to support vegetation, soon become dreary and arid wastes. The lighter particles which formed the richest portion of their soil, blow off and leave only the heavy arenacious portion; and hence perhaps those sandy deserts in which are often to be found the signs of a population once very dense. In the Mauritius the rivers were found to be diminishing under the rapid disappearance of the woods in the interior, when Government had recourse to the measure of preventing further depredations, and they soon recovered their size.

The clouds brought up from the Southern Ocean by the south-east trade-wind are attracted as they pass over the Island by the forests in the interior, and made to drop their stores in daily refreshing showers. In many other parts of the world Governments have now become aware of this mysterious provision of nature; and have adopted measures to take advantage of it for the benefit of the people; and the dreadful sufferings to which the people of those of our districts, which have been the most denuded of their trees, have been of late years exposed from the want of rain in due season, may perhaps, induce our Indian Government to turn its thoughts to the subject.

The province of Malwah which is bordered by the Nerbudda on the south, Guzerat on the west; Rajpootana on the north, and Allahabad on the east, is said never to have been visited by a famine; and this exemption from so great a calamity must arise chiefly from its being so well studded with hills and groves. The natives have a couplet, which like all good couplets on rural subjects, is attributed to Sehdeo, one of the five demigod brothers of the Mahabharut, to this effect—"If it does not thunder on such a night you, father, must go to Malwah and I to Guzerat," meaning the rains will fail us here and we must go to those quarters where they never fail.

W. H. SLEEMAN.

ART. XXIII.—*On the advantages attending the Maize and Cotton Cultivation in the Delhi Territory.*—*By G. H. Smith, Esq., Collector of Government Customs at Delhi.*

[Read at the Meeting of the Society of the 12th August, 1840.]

I had the pleasure to receive sometime ago a parcel of American Maize and Grass seed, which you were obliging enough to send me through Dr. Falconer, and for which I beg you will accept my best thanks. I hope to be able to distribute very widely through these provinces, such descriptions of the Maize you have sent, as may prove best adapted to the soil and climate of Upper India, having already done so, as regards two sorts, the seed of which I received from your predecessor Mr. Bell, two or three years ago.

I have drawn up a few rough notes on the cultivation of Maize, of which I send you a copy. I shall be glad to have any inaccuracies, suggested by the experience of others, pointed out to me, as I am very anxious that the instructions for the cultivation of this description of grain, the introduction of which I consider likely to be attended with much benefit, should be as correct as possible.

I take this opportunity of announcing the despatch of specimens of the following produce :—

No. 1.—A sample of Egyptian Cotton raised at Delhi from acclimated seed, (being the fourth generation ;) which Cotton has been carded and bound in the native manner, after having had the seed separated from the kuppas, by the common churki of the country.

No. 2.—A sample of Sea Island Cotton also raised at Delhi from seed similarly acclimated and which has been subjected to the same process.

No. 3.—A sample of Upland Georgian Cotton, ditto ditto ditto.

No. 4.—A sample of Nankeen Cotton grown at Delhi from acclimated seed of the third generation, ditto ditto ditto.

No. 5.—A sample of Huzarah Wheat both in ear, and separated from it, raised at Delhi from seed procured by Sir William McNaghten from the Huzarah country.

With regard to the different specimens of Cottons, I am anxious to have the opinion of the Cotton Committee as to their relative value, in order that my attention may be more particularly directed to that description, which appears likely to give the best return*.

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* For Report of Committee on these specimens, see few pages further on.

I subjoin a statement shewing the produce of each sort per beegah of 3,025 square yards, by which you will observe that the Egyptian and Nankeen Cottons gave by far the largest returns, and the Upland Georgian the most scanty. I am inclined however to attribute the deficiency in the crop of the latter to accident, the experiments of previous years having shown that it gives, on ordinary occasions, very nearly as heavy a crop as the Egyptian.

It is also of importance, that I should note the fact, that the Sea Island and Nankeen Cottons were much more injured by grubs than either the Egyptian or Upland Georgian ; (this grub attacks the seed of the Cotton when on the point of ripening, and injures the Cotton with which it is surrounded ;) the two former had one-half of their produce more or less deteriorated, and the two latter not more than one quarter. I am therefore inclined to class these Cottons as follows :

1st. Egyptian.
2nd. Upland Georgian.
3rd. Sea Island.
4th. Nankeen.

I place the Nankeen at the bottom of the list, samples of the produce of previous years having been pronounced, by competent judges in Calcutta, as utterly worthless. It is however, I believe, much prized in this country, and I have heard of a considerable quantity having been sold at Lucknow at the rate of 30 rupees* a maund†.

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* 60 shillings about.—H. H. S.

† 82 lbs. avoirdupois.—H. H. S.

As regards the general introduction of the cultivation of any of these Cottons into the Delhi Provinces, I despair of seeing it effected unless Government steps forward and adopts some energetic measures to bring it about.

Seed, especially of the Upland Georgian Cotton, has been distributed in hundreds of villages situated in the most eligible parts of the country, and instructions have been given to the Assamees (Cultivators) as to the best mode of cultivating it ; but in no case, that I have heard of, have Foreign Cottons obtained a secure footing in any village ; on the contrary, the cultivation has generally been given up after an imperfect trial of one season.

I enclose copy of some notes regarding the cultivation of Cotton, which I have drawn out on the plan recommended, being that suggested by the experience which I have gained during the period I have directed my attention to the subject.

Europeans have tried the cultivation on an extended scale, but it has been found impossible sufficiently to economize labour so as to make it pay.

The nature of Cotton cultivation, is such as to render it doubtful whether in India Europeans can with a Neez* cultivation, compete with Natives, from the latter being able to bring a much less expensive description of labour to bear during the tedious process of cultivating, weeding, picking, and cleaning the Cotton, which, whilst it costs the Native, who has his wife and children available, comparatively nothing, subjects the European speculator to a considerable outlay, the latter not being able, as I have said before, to economize this description of labour in the same way as the village cultivator.

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* In Hindustan the husbandry of agriculture is understood under two heads known as *Neez* and *Ryottee*. The former of these is when a capitalist undertakes to farm or cultivate *with hired servants*, and the latter when the cultivation is conducted by the Native villagers themselves, the capitalist buying the produce either by advances or at the time of cropping.—H. H. S.

But little aid can, therefore, be expected from this source, as I am satisfied that no European speculator will ever be able to grow Cotton with a profit where he has the cultivation in his own hands.

The only plan which appears to me likely to secure the permanent introduction of Foreign Cottons into these Provinces is as follows:

Let Government make over on easy terms, the farm of some villages situated in the best Cotton Districts, to a person well acquainted with the cultivation of Cotton. Let that person establish a Neez cultivation of one or two hundred beegahs of Cotton in each village, and by degrees, if he finds the returns good, let him compel his ryots to extend the cultivation over a considerable portion of the Rukba*, he himself exercising a general supervision over the operations of each ryot, and seeing that proper attention is given to the cultivation and picking of the Cotton, which he must arrange to take as sent at a certain fixed rate.

By this plan the cultivation of Foreign Cottons *(if really more remunerating in their returns than those indigenous to the country)* might, in process of time, be generally introduced throughout India, more especially, if Government would, by establishing an Agency for the purchase of Foreign Cotton for a short time, and until a market was created, secure to the grower a certain sale for his produce.

Should these hints be considered worthy of attention by the Society, I shall be glad to go into further detail and explain how my plan might be tried with advantage in this neighbourhood, which is particularly well adapted for an experiment of this nature.

I am myself satisfied that some descriptions of Foreign Cotton (especially the Egyptian) might be introduced generally into the Northern Provinces; but it is vain to hope that this will be accomplished without the aid of Government, as the Native population are far too poor and deficient in enterprize, steadily to follow up experiments which may subject them to loss.

It is my intention to continue, as I have done for some years, my efforts to bring into more general cultivation those Foreign Cottons which appear to me suited to this part of India, and which, from their superiority as regards produce and staple, are calculated to supersede the indigenous Cottons of those Districts—and, as it is of great importance in making the necessary experiments, that the samples of Cotton which I may from time to time submit for the examination of the Society, should be cleaned after the most approved method and not have the staple injured by the use of imperfect machinery, I shall feel greatly obliged to the Society if I can be furnished with one of the machines for cleaning Cotton which have been sent to the Society, and which they may consider best calculated to clean Egyptian Cotton most expeditiously and with the least injury to its staple.

The Wheat, of which I have sent a specimen, has considerably deteriorated as compared with the original seed which I received from Caubul. It is still, however, very fine and much larger than any I have ever seen. It appears to be of the same genus as the Barbary Wheat, which the Court of Directors recommended being introduced into these Provinces, and of which they sent Dr. Falconer some seed last year.

In a former communication, I ventured to recommend that the Society should procure from England seed of the best Cereal grains for distribution, and I believe a commission was sent home for a supply. Should any be now available I should wish to be furnished with a small quantity.

I am particularly anxious to get seed of some description of Oat superior to that generally met with in India. All that I have seen, either from the original seed having been of a bad sort, or, from degeneracy is of a most inferior description.

Should there be any seed grain for disposal I shall feel obliged by your kindly sending me a supply so as to reach me as soon as possible, that it may be available when the time for sowing the Rubbi crop (October) arrives.

If, added to the above, a small supply of the best description of Flax, Hemp and Tea seed could be spared, I should be able to prosecute experiments with both in the Doon, where there is reason to believe the soil and climate is particularly congenial to their cultivation.

Delhi, 25*th July*, 1840.

I have this moment received your letter of the 13th instant acknowledging the receipt of the box containing musters of Cotton and Wheat, which I hope on more minute examination will confirm the good opinion which their first appearance led you to entertain.

I shall give the Wheat, Barley and Rye, which you have so obligingly sent me, every care and attention, though if they are of the same descriptions as were sent by Professor Royle lately to Dr. Falconer, and of which I have received a supply, they strike me as very inferior.

In looking over some old numbers of the Transactions of the Society, I find in pages 90,91 and 92 of part 2, vol. 3 an account extracted from Humboldt's personal narrative, of Wheat grown at la Victoria in Caraccas which has much interested me.

The average produced as stated, by Humboldt, so far exceed, anything I have ever heard of, and the period that is required for this description of Wheat to arrive at perfection is so short, (not exceeding two months and a half) that I consider it very desirable that an experiment should be made as to whether it cannot be introduced into this part of India.

If the Society therefore will have the kindness to procure me some of the seed either direct from Caraccas, or from the Calcutta Botanical Garden, where I observe it was grown by Dr. Wallich in 1836, I shall be happy to use my best endeavours to get it acclimated in these provinces. Should it fail in the plains, there is a strong chance of its succeeding either in the hills at Mussoorie, or in the Doon, in both of which situations I will take care that it has a fair trial.

I take this opportunity of mentioning that I have made several experiments in the Hills with Wheat (Barbary) Oats, and American Maize. The two former were sown by me in June, immediately after the Rubbi harvest was off the ground in the plains, and ripened at the end of October, or just when they were sowing the same crops in the plains. The Wheat suffered partially from mildew owing to the heavy rains, but the Oats were as fine or finer than I have ever seen in India.

The American Maize was also sown at the same time and came to very great perfection, some of the seeds containing upwards of 600 very large and perfect grains, and weighing without the husk, when perfectly dry, 20 sicca weight.

My garden where these experiments were made, is situated in the very highest part of Mussoorie, and is I believe upwards of 7000 feet above the level of the sea.

I beg to announce to you the fact of my having this day dispatched to your address, some specimens of Cotton, as noted below*, which were raised last year in the Doon from part of the same seed, which produced the Cotton, specimens of which I last sent you. I am particularly anxious to learn whether the cotton raised in the Doon is superior or inferior to that which was raised at Delhi.

As you think so highly of the Huzarah Wheat, I shall endeavour to send you a supply of seed the immediate produce of the Huzarah country. You will find it far superior to what I sent, which had partly degenerated. I am expecting a large quantity from Caubul shortly. Perhaps the Society may be induced to send a portion to England, where I doubt not it will be much prized.

To shew how singularly this wheat is affected by difference of soil and climate I enclose a few grains raised at Delhi. Kurnaul, and the Doon ; an inexperienced person would scarcely be led to believe that they were all of the same species, yet such is the case, the whole being the produce of the seed which I procured last year from Caubul. That produced in the Doon, most closely resembles the original seed.

I shall anxiously expect the receipt of the Society's opinion of the musters of Cotton which I have sent†, as also their sentiments on the hints contained in my last letter, referring to the introduction of improved descriptions of Cotton into India. Should they desire it, I am prepared to enter into a full exposition of my plans for effecting this most desirable object.

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* Three specimens of Egyptian Cotton.

1st. With the seed in it.
2nd. Separated from the seed by the common native churka
3rd. Cleaned with the hand.

Three specimens of Sea Island and Nankeen Cotton in the stages as noted above.

† For report on these specimens, see a few pages further on.

Notes on the Growth of American Maize.

1. The American Maize is much finer and larger, and the grain of a better description than the Indian Corn, called Mukka or Bhoottah, grown in these provinces, and it is probable that the American species will in a few years, entirely supersede that of this country.

2. It is a most valuable product, as it yields a most extraordinary return, sometimes, in favourable situations, from four to eight hundred-fold. It occupies the land but a very short time, and gives a larger rate of grain, per beegah, than any other sort of produce I am acquainted with.

SOIL.

3. Little need be said regarding the soil and mode of culture, inasmuch as the soil which is used for the Mukka of this part of India, and the same care in its cultivation, will, doubtless, answer for the American Maize, which, however, will yield a more abundant and valuable crop,—the ears being double, treble, and sometimes sextuple the size of the common Mukka, and the grain of a much finer and more wholesome description.

PREPARATION OF LAND, &c.

4. The land should be ploughed up and well prepared by the commencement of the rains, and, if necessary, manured; a considerable interval should

elapse between the first and last ploughings in order that the soil should derive full benefit from exposure to the sun and atmosphere. Where irrigation is available, and irrigation is most desirable in these provinces, two crops can doubtless be raised from the same land, in which case the first sowings should take place in March or April, and the second as soon after the first crop is gathered as practicable. Where two crops are not required, the sowings had better be postponed till the rains set in, after which little or no irrigation under ordinary circumstances will be required.

SOWING.

5. The seed should be sown in rows sufficiently far apart to admit of a plough being used after the plant reaches a certain height. The distance between the lines being fixed (say about four feet apart), a small quantity of manure is to be thrown down at intervals of 18 inches, on which place three or four seeds, and above them a thin covering of mud which should be pressed down with the foot.

6. When the plants are three or four inches high, the field should be carefully hoed to remove the weeds, shortly after which it should have its first ploughing; when the tapel or male blossom appears, a second plough should be put through the field, sending on both occasions the share very near to the roots. The earth should, after the second ploughing, be gathered round the roots of the plants with a hoe, and all shoots from the parent plant removed, as they weaken the plant and produce nothing.

7. American Maize might be grown in beds and afterwards transplanted; when this mode of culture is adopted, the plants should be raised three or four inches apart, and a small quantity of earth allowed to adhere to the roots when removed.

8. When the grains in the ears are formed and begin to harden so as not to yield to the pressure of the thumb nail, the top and leaves of the plants should be removed and tied up (after drying two or three days) in bundles for fodder for cattle.

9. Experiments should be made by sowing American Maize according to the plan adopted by the cultivators of this part of India, and a comparison made between the results of the two systems as regards produce and relative cost of cultivation.

GATHERING.

10. The grain, when hard and ripe, to be gathered, well dried, and put away in an airy place in husk or shelled.

11. An account should be kept by the growers of American Maize of the cost of cultivation, produce, &c. &c., the information regarding which might be embodied in a Nuksha according to the annexed form; the column of remarks being left for any observations the cultivator might be able to insert, as to any deviation from the rules laid down which experience might point out to him as desirable.

Statement of Produce, &c. of American Maize, grown by ——— in the year 184—.

Year.	Quantity of land under cultivation.			Number of times the land has been ploughed.	Nature of crop.	Date of sowing.	Date of gathering.	Produce per Beegah.		Expences including all charges.		Remarks.
	Beegahs.	Biswahs.	Biswansas.					In Husk.	Shelled.	Per Beegah.	Total.	

Notes on the Cultivation of Foreign Cottons in India.

There are four descriptions of foreign Cotton, the cultivation of which is worthy of attention.

1st, Egyptian. 2nd, Sea Island.	Long stapled Cottons producing black seeds, which Cottons, though in limited demand at home, realize the highest rate.
3rd, Upland Georgia.	Short staple, green seed, and in the greatest demand.
4th, Nankin.	Very productive in quantity, but very inferior in value.

Of these four kinds of Cotton, the first and third appear most deserving attention. A few notes are annexed regarding their culture, it being remarked at the same time, that additional experience will doubtless point out many modifications of the rules now laid down.

SOIL.

The soil selected for the culture of these Cottons should be light and sandy, not too moist nor too rich; if the former, the roots will rot and be destroyed by maggots; and if the latter, the plants will run to leaf and give but little produce.

PREPARATION OF LAND AND SOWING.

The land should be thoroughly ploughed, long intervals allowed to elapse between each ploughing, in order that the soil many have the benefit of the sun and atmosphere. Weeds should be eradicated as far as possible, and manure given when the land is poor or over-cropped. The time for sowing is April and May, where there are facilities for irrigating; and after the first fall of rain in June or July where there are not.

Where the land can be irrigated, shallow trenches, 18 inches broad, should be made four or five feet apart, and holes dug in them 18 inches square, 15 or 18 inches deep, and 18 inches apart. The earth used for filling up which should be pulverized, and, if necessary, manured.

These trenches for facility of irrigation, though broader, should be made like those in which peas are sown; they ought to be filled up in the rains lest water should lodge about the roots of the plants and injure them.

About a dozen seeds should be placed an inch and a half below the surface of the soil in each hole, care being taken to select good seed which ought to be soaked for some time in water before sowing: all seeds which float on the surface to be rejected.

If the seeds do not vegetate in twenty days, fresh ones should be sown. When irrigation is not had recourse to, trenches need not be used, but the seed sown in holes as above, at the same distance apart.

When the plants become three or four inches high, all except three or four of the healthiest, and when they are two or three months old, all but one, should be removed. This should be a healthy plant, and situated as near the centre of the hole as possible.

The plantation should be weeded once a month, the first time with a Khoorpiea, and after that with a hoe. The weeds should be carried away, as they otherwise produce insects.

When the plants are 18 inches high, it will be as well to try, with a portion of them, whether benefit is derived by nipping off the top: this is insisted on by some, and opposed by others.

The Cotton, if irrigated, will bear two crops in the year. The first will be ready in September and last till January; the trees should then be pruned, and experiments made as to whether leaving them three or four feet high, or cutting them down to 18 inches answers best. The first is considered by far the preferable plan, except when the plant is injured by frost. A second though scanty crop will be produced by the time the hot winds set in, and last till the rains. Between each crop, and after pruning, the ground should be cleared of all weeds by the hoe as often as appears necessary.

When the Cotton is ripe, too much attention cannot be paid to the gathering; it should be carefully taken out of the pods (which should be left on the tree) and divided into three portions, good, middling and bad; no dust or fragments of leaves being suffered to mix with the filaments, *as that reduces its value one-half.*

The Cotton should be gathered after the dew is off the ground, and afterwards spread out and well dried in the sun; great care being taken in keeping the good and cleanest separate from the middling and bad.

The plants should be retained till they die off and then renewed as above. It is not yet well ascertained how long these different species of Cotton plants will last and give fair returns in India.

Much will depend on local peculiarities of soil and climate, the effect of which ought to be noted. All the plants which are removed at the first thinning can be planted off again. When this is done some portion of earth should be allowed to remain round the root of each plant.

Some people recommend American Maize being sown at the same time and in the same holes with the Cotton, alleging that the Cotton plants benefit by the protection afforded them from the sun. By the time the Cotton plants attain a considerable size, the Maize will be ripe and fit for removal: this might be tried with advantage.

An account should be kept by the growers of foreign Cottons of the cost of cultivation, produce, &c., &c., the information regarding which might be embodied in a Nuksha according to the annexed form; the column of remarks being kept for any observations the cultivator might be able to insert, as to any deviation from the rules laid down which experience might point out to him as desirable.

Statement of produce of Foreign Cottons cultivated in the grounds of G. H. Smith, Esquire, during the year 1839-40.

Quantity.		Produce per pucka Beegah of 4,025 square yards.						
		Mds.	Seers.	Cks.	Mds.	Seers.	Cks.	
No. 1, Egyptian,	Clean Cotton,	1	38	0				
	,, Seeds,	5	34	0				
		—	—	—	7	32	0	
No. 2, Upland Georgian,	,, Cotton,	0	37	12				
	,, Seeds,	2	33	0				
		—	—	—	3	30	12	
No. 3, Sea Island,	,, Cotton,	1	18	14				
	,, Seeds,	4	16	10				
		—	—	—	5	35	8	
No. 4, Nankin.	,, Cotton,	1	35	0				
	,, Seeds,	5	25	0				
		—	—	—	7	20	0	

Statement of Produce, &c. of Foreign Cottons, grown by ———— in the year 184—.

Year.	Quantity of land under cultivation.			Number of times the land has been ploughed.	Quality of Cotton.	Nature of crop.	Date of showing.	Date of gathering.	Produce.						Expenses including all charges.		Remarks.
									Per Beegah			Total.					
	Beegahs.	Biswahs.	Biswansas.						Kuppas.	Seeds.	Clean Cotton.	Kuppas.	Seeds.	Clean Cotton.	Per Beegah.	Total.	

REPORT ON COTTON RAISED FROM FOREIGN SEED AT DELHI AND DEYRAH DHOON.

Specimens received from Mr. Smith, raised at Delhi.

No. 1.—A sample of *Egyptian* Cotton raised at Delhi from acclimated seed (being the *fourth* generation), which Cotton has been carded and bowed in the Native manner, after having had the seed separated from the Kuppas, by the common Churki of the country.

No. 2.—A sample of *Sea-Island* Cotton raised at Delhi from seed similarly acclimated, and which has been subjected to the same process.

No. 3.—A sample of *Upland Georgia* Cotton, raised at Ditto, from Ditto Ditto.

No. 4.—A sample of *Nankeen* Cotton, raised at Delhi, from acclimated seed of the *third* generation, and subjected to the same process as the others.

Specimens raised at Deyrah Dhoon.

Egyptian Cotton No. 1. A.—With the seed in it.

No. 2. A.—Separated from the seed by the common native Churki.

No. 3. A.—Cleaned with the hand.

Sea-Island. Nos. 1, 2, and 3. B.—As above.

Nankeen. Nos. 1, 2, and 3. C.—As above.

N. B.—These Cottons were raised in 1839, from a portion of the same seed as produced those grown at Delhi.

Minute by Mr. Owen Potter, on the above Samples.

No. 1. From Egyptian seed. A good colored cotton, but probably injured in staple by being bowed. Tolerably regular. It would meet with extensive consumption, but I apprehend the expense of bowing to be so great as to raise the price beyond what it would be safe to pay for shipments to English markets.

No. 2. From Sea-Island seed. A very useful and valuable Cotton indeed—a good and regular staple of fair strength. It is faulty from its nibbiness, which I cannot help thinking has been occasioned by the native bow which very much harasses all Cotton, but is more especially injurious to fine-fibred kinds.

No. 3. From Georgian seed, of good healthy color, but deficient in staple, and rather irregular.

No. 4. Nankeen Cotton. Its color would make it unmerchantable in England.

N. B.—In regard to the above four samples a fair estimate of color and value cannot be formed, owing to its having been bowed and carded. All samples for report should be sent without undergoing any other operation than that of the Churka.

Nos. 1 and 2. A. From Egyptian seed—Kuppas and Cotton good color, but deficient and irregular in staple—very much deteriorated

3 A. Cleaned by the hand, which process is very expensive: in other respects not differing from the above.

B 1, 2, and 3. Irregular in length and strength of staple—more strong.

C 1, 2, and 3. Nankeen—not merchantable in English market.

Calcutta, August 24, 1840.

Minute by Mr. Chas. Huffnagle.

Calcutta, September 3*rd*, 1840.—I have to-day hastily looked over several samples of Cotton sent by Dr. Spry, for the inspection of the Members of this Committee, and also read with much pleasure the interesting communication from Mr. Smith of Delhi. It is only to be regretted that that gentleman did not send us samples of the Cotton raised by the natives in his vicinity, to compare with the specimens he has forwarded. Delhi, Nos. 1, 2 and 3, from Mr. Smith are all specimens of good and valuable Cotton; No. 2, from Sea Island seed, is I think preferable to either of the other from having the finest and longest fibre and being of equally good colour; No. 4 is a coloured Cotton, which appears from the opinions generally expressed to be valueless; of the Deyrah Dhoon Cotton, we have three specimens from Egyptian seed—of good colour—staple fair strength, but not long.

And three specimens of Sea Island; from the muster in Kuppas, this appears very much deteriorated, and more resembles Upland Georgia, than the produce of Sea Island seed.

ART. XXIV.—*On the great productive prospects of the Arracan Province,—Prospects to Settlers at Cheduba Island.—Communicated by Capt. Bogle, Commissioner of Arracan.*

[Read at the Meeting of the Society of the 12th August, 1840.]

The Carolina Paddy seed is now in the ground, and from what you say of its productive qualities it certainly would appear to be an object of most importance to encourage its growth in the Province of Arracan, which is so peculiarly favorable to the growth and export of Rice. It shall therefore have my very best attention*.

The Rice of this Province, at least some kinds, is singularly bulky when boiled. I have heard it stated that it is some 25 or 30 per cent. more *filling* than Bengal, consequently in high favor with the poorer classes of Natives.

The report the Society has sent on the sample of Hemp I forwarded is very satisfactory indeed, and has induced me to send two other samples†, that from

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* The result of the experiment has proved most successful. The following is an extract of a letter from Captain Bogle dated July 28, 1841:—"The Carolina Rice you sent me last year has turned out admirably well. I wish you would send me much more, if you have it to spare. I am in great hopes that it may be possible to reap two crops per annum of it, which will be doubling our agricultural riches. The natives admire it exceedingly, and find it far more productive than their own coarse grains."

† These specimens were shown to Mr. Hodgkinson a member of the Flax Committee, who was so kind as to examine them and to report, that if prepared properly they would suit the home market well, and be much preferred to either our "Sunn" or "Jute."—H. H. S.

Ramree appears to me to be remarkably strong, and I think the article deserves every encouragement, and I would venture to suggest, that were the Flax Company to take a grant of waste land on the Island of Cheduba, say 2000 acres, and import 2 or 300 Bengalee Coolies from Chittagong, or Hill Coolies, a very successful experiment might he made ; there is plenty of land on Cheduba which they might have for nothing, with the sea at their very doors, and the soil is well adapted to the growth of Hemp, Rice, Sugar-cane, Cotton, &c. The Island is not thickly peopled, there is great variety of soil and situation, the climate very tolerable, security of property *perfect*, and petroleum and wood-oil as well as coal, may, it is believed, be procured in some quantity. I much wish the attention of speculators could be drawn to Cheduba, I do believe it might be made a little Mauritius. Anybody wishing to inspect it might come to Akyab in the *Amherst*, and would meet with every assistance from me.

Please to send me some seed of the Cannabis Sativa recommended by Mr. Hodgkinson, that I may give this Hemp a proper trial.

By the *Amherst* I have sent you some Sandoway Tobacco seed and Black Pepper which grows here almost wild, likewise two samples of Cotton blankets made in the Hills north of Akyab, all of which please present to the Society.

The Black Pepper, though probably not indigenous, is found here on the sites of deserted gardens, entwined around the stems of tall trees, and growing without the least attention being paid to it. It seems to require the support and shelter of a tree as well as an elevated and dry soil. That which I have sent you has, I believe, been boiled; a plan which the Natives here adopt to preserve it from insects.

I have every reason to think Pepper might be grown in this Province to a great extent, and as for Tobacco you are of course already aware of the great superiority of that grown at Sandoway. The Cheduba is little inferior. The quantity of this product now raised is, I regret to say, less than formerly. The cause, a want of demand. Were an Agent settled here, he might buy up the whole crops yearly at 8 or 9 Rupees a maund.

Up to the present time the season has been highly favourable to our great staple, Rice, and the intelligence from Chittagong and various other quarters leads to the belief that great distress prevails from the effects of inundation, and that the crops will, this year, fall very short. The people of Arracan are making great exertions to extend their cultivation, and speculating on even a larger demand for their produce than last year.

ART. XXV.—*On the mode of cultivating Tobacco at Sandoway.—Communicated by Lieut. Thos. Latter, Adjutant of the Arracan Local Battalion.*

[Read at the Meeting of the Society of the 12th August, 1840.]

The seed of the Sandoway Tobacco now forwarded is of the sort called Prooashay from the village at which it is grown, and is considered far superior to any others in the district. This village is situated about a day's journey in the interior from the station of Sandoway—and on the banks of the river, which at that spot are high, and the river unaffected by the tide. In a letter published in the Society's Transactions some time since, I perceived that the attempt of introducing the Tobacco of this district had in a measure failed at Saugor, and that the appearance of the plant was stunted, and the leaves small. It may not therefore be considered out of place for me to give a short description of the mode of its culture by the Natives, and the soil it affects.

In the first place, to ensure a proper flavor to the leaf it is of the utmost importance that the soil should be free from *salt*, and for this reason those crops which have been sown on the banks of a river affected by the tide, are always of an inferior value; indeed the percolation of the brackish water through the soil extends to a greater extent than would at first be imagined; should the soil also be naturally poor it must be well manured.—A patch of ground is first prepared, for the reception of the seed, with the greatest care—every stone, weed, or extraneous substance is cleared away; after having been ploughed up the clods are broken, and the earth raked, till the soil has the appearance of having been sifted; the seed is then sown from the hand about the breaking up of the rains, and generally when a shower is expected. When the plant has attained the height of about six inches, it is transplanted to a suitable spot, and set in rows, each plant about two feet apart—this of course ought to be done on a cloudy day, and when a few showers are likely to fall. This transplantation is an essential operation, for if the plant be crowded the leaf will be small, and deficient in juiciness.

During the whole of its growth, the ground is kept clear of weeds, the plant is tended with great care, and any decayed or injured leaves pulled off. In the month of April, when the plant has attained its full growth, the leaves are pulled off and fastened between slips of bamboo, similar to the specimen I have forwarded, and left in the sun to dry.

The above account will shew the great care the plant requires even in a favorable spot, and when we take into consideration the vast varieties of soil in India there can be little doubt that there are many spots as well adapted to it as Sandoway, were the same attention paid to its growth.

I have been endeavoring, but without success, to procure a specimen of the Hemp of this district; it is of a very superior description, but only a sufficient quantity is grown for the wants of the inhabitants. The soil is highly adapted for it, and I should feel obliged if you could favor me with a packet of the best sort of seeds for distribution.

A specimen of the Tea of this district has, I believe, been forwarded to you, but in addition to it I have every reason to believe, that the Caoutchouc tree may be found among the productions of these vast jungles—the opportunities afforded for investigation, during a tour of three months' duty at this out-post (Sandoway) are, as may well be imagined, very circumscribed—but if the tree does exist, I have no doubt of being able to discover it, having given the necessary directions by which to recognise it to several intelligent Natives, and offered a reward to the first who succeeds.

The soil of Arracan, in general, is far from well adapted for agriculture, being either too sandy and heating, or too moist for any thing but Rice, but every thing points out the district of Sandoway, especially that part contiguous to the Suddur Station, as capable of the highest state of culture and improvement. Its features are perfectly dissimilar to the other parts of Arracan so near the sea. The jungle, instead of consisting of nothing but bamboo, is here composed of vast forest trees intermingled with shrubs. The richness of the soil in many parts, and the various degrees of moisture afforded by its circumscribed valleys, and of shade and drainage by the varying slopes of its hills, allow of spots being selected, adapted to many varieties of plants; to which advantages may be added its well known salubrity—it being the general resort of the invalids of the province.

ART. XXVI.—*The Productions and Floriculture of the Valley of Herat. By Major E. D'Arcy Todd, Political Agent at Herat.*

[Read at the Meeting of the Society of the 12th of August, 1840.]

The winter at Herat is not so severe as that of England, although snow lies on the ground for a few days during the months of December and January, and occasional frost often occurs until early in March.

The summer months are much hotter than in England, but cooler than in India, in consequence of a very high wind which blows steadily from the north during the months of June, July, August, and September. Little rain falls except in winter and early spring, the cultivation of the valley being carried on by means of canals cut from the river ; the climate may certainly be considered as a very dry one.

The principal trees in the valley are the elm, the ash, the fir, the plane, the poplar, the willow and the cypress. Of fruit trees there are the pear, apple, quince, peach, apricot, plum, cherry (sour), mulberry (red and white), pomegranate, walnut, filbert, barbery, and fig ; the pistachio flourishes in the district immediately north of the valley. Of melons and grapes we have every variety in perfection. The vegetables of Herat are cucumbers, beet, onions, lettuce, brinjall, carrots, turnips, spinach, nole-cole and beans ; all, except the three first named, of very indifferent quality.

The garden flowers are few in number—the rose, red, white, and yellow ; the jessamine and a species of lilac ; the common red tulip ; the narcissus ; the blue iris ; the pink and marigold ; the sunflower, hollyhock, and coxcomb, are common, but excepting the *Nastrian* rose I have not seen any flowering shrubs in which our English and Indian gardens are so rich. Regarding the wild flowers I regret that I am not competent to afford any useful information. I would merely mention that I have seen the butter-cup, dandelion, nettle, cornflower, clove, forget-me-not, and poppy.

The above may perhaps give some idea of the no dute of Herat.

ART. XXVII.—*Public Measures for encouraging the promotion of the Agricultural Resources of India.*

[Read at the Meeting of the Society on the 9th September, 1841.]

SIR,—I am directed by the Right Honorable the Governor of Bengal to transmit to you for the information of the Agricultural and Horticultural Society, the accompanying copy of despatch No. 7 of 1840, from the Honorable the Court of Directors in the Public Department dated 27th May, together with a transcript of the letter from Dr. Royle which accompanied it.

I am, Sir, your obedient servant,
G. A. BUSHBY,
Secy. to the Govt. of Bengal.

Fort William, the 12*th August,* 1840.

To H. H. SPRY, ESQ. M. D. *Secy. Agri. and Hort. Society of India.*

Public Department, No. 7 *of* 1840.

Our Governor General of India in Council.

We have on various occasions given expression to the strong interest which we feel in the development of the agricultural resources of India, and to the deep sense which we entertain of the importance of directing attention to the subject. With a view of assisting the promotion of these important objects, and in the hope of eliciting valuable information, we forward a paper by Dr. Royle on the Corn and Pasture Grasses of India*. A copy of a letter from Dr. Royle in reference thereto also forms a number in the packet.

We are &c.

(Signed by two chairs and eleven members.)

London, the 27th May, 1840.

FROM DR. ROYLE TO J. C. MELVILL, ESQ., *Secretary of the Court of Directors of the East India Company.*

SIR,—As nothing is of more importance in the Agriculture of a country than increasing the number of the productions of the different plants which yield fodder for cattle or food for man, so I was induced in proceeding through my recently published work—"Illustrations of Himalayan Botany, &c."—to pay particular attention to the *Corn* and *Pasture Grasses of India,* for the purpose in the first instance of ascertaining their names, number, identity or difference, value, and the parts of the country in which they occur, in order that I may subsequently have the means of giving a more popular view of the subject.

As Rice, Sorghun, Indian Corn and many other grains are suited to Bengal and the rainy seasons, so Wheat and Barley with Oats and Millet are equally at home during the cold weather months in the plains of Northern India, and in the summer of the Himalayas.

There are Pasture Grasses peculiar to the table-land of Mysore, and to the plains of India, as well as to the Himalayas, but it will probably be advisable and quite practicable to introduce some of the gigantic Pasture Grasses of Brazil into Bengal, and of Italy into the north of India. But the Himalayas possess so many of the identical Pasture Grasses which are so much valued in this country, as well as many peculiar to themselves, that it is probable they have more to give than to receive. As this subject is one of great importance and not much attended to, I have been induced to have a few copies of that part of my work referring to the Corn and Pasture Grasses of India struck off separately, and which I beg to send.

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* For this valuable monograph see page 91.

If the Court of Directors will be pleased to direct these being sent to the three Presidencies, it is propable that many gentlemen in different parts of India might be induced to pay attention to a neglected subject, and make public what are the capabilities as well as the wants of the several provinces in this respect. The Pasture Grasses, always a subject of importance, become of still greater interest when considered in reference to the attempts made to improve the breed of cattle and of sheep, at present going on in India, by which it appears that the Merino and its varieties are succeeding so well in the Mysore and west of India, though I believe that the English breed is best suited to the Himalayas.

I have the honor to be, &c.

(Signed) J. Forbes Royle.

London, *29th April*, 1840.

ART. XXVIII.—*Notes on the Sugar Cultivation and Soils of Barbadoes; obtained through Lord John Russell on the application of John Stikeman, Esq.—Presented by Henry Piddington, Esq.*

[Read at the Meeting of the Society on the 15th July, 1841.]

Windward Islands, Govt. House, Barbadoes,
15th September, 1840.

MY LORD,—In reference to your Lordship's despatch of the 24th March, general, No. 16, and to mine of the 21st July last, No. 20, St. Vincents, I do myself the honor of trasmitting to your Lordship copies of a letter and memorandum from the Honorable Philip Lytcott Hinds, relative to the Sugar Soils of Barbadoes, specimens of which, in boxes, numbered from 1 to 9, as explained in the latter document are forwarded to the Colonial Office by the packet now under despatch.

I have, &c.
E. J. MURRAY MACGREGOR,
Governor.

The Right Hon'ble Lord JOHN RUSSELL.

Barbadoes, 12th September, 1840.

MY DEAR SIR,—In conformity with my promise to select proper specimens of the Sugar Soils of Barbadoes, to carry out the enquiries desired by Mr. Piddington of Calcutta, through the intervention of the Colonial Department, I have applied to various persons acquainted with the Agriculture of this Island, to aid me to procure such specimens as are desirable, and they are contained in twelve boxes numbered 1. A. and B.; 2, 3 A. and B.; 4, 5, 6 AB.; 7, 8 and 9; the particulars of which are detailed in a statement which accompanies this letter.

Agriculture is prosecuted upon any other than scientific principles in this Colony, experiments are made without chemical tests, and the results of these are more the issue of chance than the product of scientific combinations. It is to such cause that I am unable to furnish you, upon the experience of any attentive observer, with such matters of fact as require an accurate calculation in reference to the quantity of rain which may have fallen in a given period, or the atmospheric changes. Observations of Rain Gauges and Hygrometers form no part of the interested pursuits of the practical Agriculturist of Barbadoes.

The temperature of the Island varies, in the utmost extremes of the usual seasons, not more than 8 to 10 degrees, the mean temperature in the shade being from 76 to 80, and the higher elevations ranging 4 to 5 degrees below that of the lower surface of the Island. The Island of Barbadoes being only 21 miles in length and its greatest breadth 14 miles, the altitude of its highest land not exceeding 1150 feet, no great variety of climate can be expected in the circumscribed limits and small elevation of its surface.

It has been observed that "*the surface of the Island may be distinguished into the flat and the hilly.*" The low land occupies the northern, southern and western parts, and rises by precipitous broken acclivities running parallel to the coast, in terraces of flat open country

—to the highest land situate something to the north of the centre of the Island. The extreme ridges of high land terminating there, terraces embrace a country on the opposite direction, totally different in appearance and scenery. There also exists an essential difference in the immediate substratum of the soil, that of the flat country being entirely calcareous, and the hilly country resting almost exclusively on mineral substances belonging to the clay genus.

These observations I have deemed appropriate to the enquiry to be entertained, and informing a collection of the Sugar Soils of Barbadoes for examination, linking the practice of cultivation here with the instructions as to superstratum and substratum of the several specimens, I have considered it expedient to confine them to such portions of the soil as are *immediately* connected with the growth of the Sugar-cane. In many places the depth of productive matter is exceedingly shallow and scarcely exceeds 12 to 14 inches, resting, in reference to the flat portion of the country, uniformly on calcareous formations.

Nos. 1, 2, 3, 4 and 5 embrace all the super-soils, existing in various combinations and proportions of the flat country. Nos. 6, 7 and 8, those of the hilly or argillaceous district.

The usual mode of planting the Cane is in squares of four feet, affording 16 square feet to each plant, an excavation of 18 inches to 2 feet in width and 7 or 8 in depth, is made in the centre of each square, and one plant is inserted by an iron drill, in the undersoil at the bottom, and in the centre of each excavation. This system of excavation (or holing in the island phraseology) has obtained in the Colony by long experience of its benefit in protecting the soil from the serious injuries and waste it would otherwise sustain from heavy tropical rains. The manures employed are decomposed vegetable matter and animal deposit. Horned Cattle are littered for the combination of these substances, and this manure is applied on the surface of the soil in each hole or excavation, experience having indicated that the roots of the Cane-plant seek the surface of the soil.

Rape dust and soot, imported from England, are also occasionally employed with good effect as manures, but these are not very extensively used. A practice is now obtaining to sow the "Holchus Sorghum" in rows of 8 feet distant, to be cut down in a succulent state, and are bedded in the banks as a manure for the Sugar-cane.

The "Phaseolus Mungo," a Pea obtained from the East Indies, has been cultivated by a few planters to cover the soil in preparation for the Cane, in the same manner as the "Pois Noir" at the Mauritius, but here it has been removed from the soil and thrown to the Cattle as a litter and for fodder.

Irrigation to a small extent from a rivulet in the eastern end of the island has been resorted to; but this is too insignificant to form any particular feature in the system of Barbadoes Agriculture. It has been of little use for many years past, and the very few estates to which it has been available have not reaped any advantage from it.

The usual months in which the Cane-plants are set in the soil, are December and January; and it has been a general and very good practice to cover the land, having a young crop of Cane-plants, with the dried blades (or trash as it is called here) of the old Canes as they are reaped.

This system protects the soil from the effects of the scorching rays of the sun during the dry reaping months of the year that succeed the period of planting; and it has been attended with great advantage. I believe I have stated all that is necessary with regard to Cane cultivation, and refer you to the annexed memorandum in reference to the contents of the boxes which I hope will answer the purposes for which they are designed.

I am, &c.

(Signed) PHILIP L. HINDS.

JOSEPH GARROWAY, ESQ.

ART. XXIX.—*Report on Hemp Cultivation, &c. in British Gurhwal, by Captain H. Huddleston, Senr. Asst. to the Commr. of Gurhwal.—Submitted through the Commissioner of Kumaon on the* 14*th July*, 1840.

[Read at the Meeting of the Society on Sept. 8th, 1841.]

2. There are two kinds of Hemp, "*Bhung*," indigenous to the Himalayas, and that called "Khur-Bhunga," or Jungle Bhang, growing wild throughout the whole of these Hills in all situations, and attaining a very considerable height during the season of the periodical rains, is of no use whatever, for the very insignificant quantity of "churrus"—(the inspissated juice of the leaves obtained from the plant by rubbing between the hands)—does not remunerate even the

poorest class for the trouble bestowed upon it, and as it does not yield a fibre that can be turned to any use, I need not of course make any further remarks regarding it.

3. The real hemp, or cultivated kind, is grown chiefly on high lands, and principally on the northern faces of the mountains in well prepared and abundantly manured soils close to villages; or in recently cleared lands by burning the primeval forests, the soil of which from the accumulated decomposed vegetable matter of years is rich enough to insure the superior growth of the plant and an abundant crop without any manure for one season. No irrigation is ever resorted to, and very little is produced under an elevation of 3000 feet, the heat of the valleys being detrimental to its quality, and the plant appears to flourish best, at elevations of from between 4 to 7000 feet.

The Choprakot, part of Budhan, Chaundkot, Chandpoor, Dhunpoor and Dewulgur districts are the ones in this division where the greatest extent of cultivation exists, and where the best quality of Hemp is produced. These districts, have, as you are aware, high ranges of mountains intersecting them in all directions with extensive forests, and are situated in the eastern and central parts of Gurhwal; and save in the valleys have a pretty even temperature.

The northern pergunahs near the snowy range have no Hemp cultivation whatever, the severe cold not being favorable to the growth of the Bhang, and but a very small quantity is grown in the southern parts of the district bordering on the plains, so that the middling district situated between the "Pindur" to the north and the "Nyar" or "Samee" rivers to the south, and centrically with regard to the province of Kumaon and Gurhwal, may be termed the chief Hemp-producing districts of British Gurhwal; the fields nearest to villages, as being the easiest for manuring, and the culturable wastes with a rich soil of accumulated rotten vegetation, or recently cleared forest lands being those in which the Hemp plant is alone cultivated to advantage with respect to its quality.

4. The culture of "Bhang" or Hemp, as practised in this district is as follows. The ground after being well cleared and prepared; the seed is sown towards the end of May or early in June, at the rate of 20 or 25 *pathas*, equal to about 26 or 33 seers per beesee, (from 52 lbs. to '66 lbs. avoirdupois,) which latter is the common denomination now used in Gurhwal and very near equal to an English acre. During the early growth of the plant the ground is kept free from all weeds, and the young plants are thinned, leaving a few inches between each, and until the crop has attained a good height the ground is kept clean from all rank vegetation—after which it attains to the height of 12 and 14 feet and is cut in September and November.

5. Of this cultivated Bhang there are two kinds, the plant called *Goolanga* or *Goolbhanga* which produces seed, and the one which only flowers but has no seed; and this latter is called "Phoolbhang," from which the best sort of Hemp is prepared; the plants being cut a month or six weeks earlier, and producing a stronger and superior fibre to the other. On the stalks being cut green they are dried for several days in the sun by being piled against the walls of the

terraced fields until they became quite brown. The plants have the seed extracted by rubbing between the hands, which produces the churrus[*], and this is scraped off and made into rolls for sale. The leaves also are pounded, from which "Ganjah" and "Subzee[†]" are manufactured in small quantities. When the stalks are sufficiently dry they are tied up into bundles and steeped for fifteen or sixteen days in tanks or running streams, being kept under water by pressure—on being taken out they are beaten with wooden mallets and dried again in the sun, when the fibre is stripped off from the thickest end of the stalk, and after being again beaten, this fibre is made up into twists for sale and manufacture of sackcloth for wear, bags and ropes.

6. The total money return from the product of the cultivation of the Hemp plant would be considerable, if there were any demand for exportation, though the average return even now is amply remunerating to the grower, and were it not from the well known dislike which the Hill people have to extra labor it would be more extensively cultivated than it is. The limited cultivation at present, however, supplies the wants of the population for sackcloth, bags and ropes, nearly the whole of which, in considerable quantities,

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[*] Churrus, as Capt. Huddlestones's description indicates, is a spontaneous exudation obtained from the Hemp plant by rubbing the hand over the tops of it when the seed is ripe. It is virulently intoxicating, and on account of its aphrodisiac and other qualities is much sought after in India. Minute portions are mixed in the materials for smoking and the fumes inhaled by means of the hookah.—H. H. S.

[†] Also intoxicating aphrodisiac drugs.—H. H. S.

is consumed in the district—the lower classes of the Gurhwal population dressing themselves in the cloth manufactured from the Hemp, and this still encourages the cultivation in a great measure. The average return per beesee (or English acre) may be stated as follows—3 seers (6 lbs.) of churrus valued 6 Rs. (or 12 shillings); 4 maunds (or 320 lbs.) of Hemp, value 8 Rs. (16 shillings); and about 30 to 35 seers (60 to 70 lbs.) of seed yielding about 5 seers (10 lbs.) of oil, value one rupee (2 shillings). Giving a total of 15 rupees per beesee*.

7. The seed sells generally at 20 *Pathas* per rupee or from 27 to 30 seers (as this wooden measure varies in different places), and the seed being light I have found that the average weight of each Patha is about 1 seer and 5 chittacks. The Hemp sells at 2 rupees a maund amongst themselves, and the Dooms (or lowest class of the agricultural community) are the chief cultivators of the plant.

The labor being considerable the cultivation is chiefly confined to this class, and the inhabitants of other parts of the district purchase from them the raw material or the ready-made cloths called "Bhunghelas," which are folded over the shoulders and skewered in front, like the Bhoteeas do their blankets, and which forms the universal dress of the lower agricultural classes of Gurhwal in the summer months, or the whole year through, with those who cannot afford to purchase blankets, as well as bags of sizes for the holding of grain and ropes and cords for carrying loads.

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* Or about £1-10 an acre.—H. H. S.

Their cloths and sacks are pretty durable and are of different textures. The coarse cloths selling for 2 Teemashees or about 6½ annas*, and the finer ones for 3 Teemashees or 9½ annas each; the bags called "Kotilas" selling for 1 to 3 annas each†, according to sizes, and the smaller and closer-wove ones called "Thylees," for carrying Attah, (wheaten flour) about the same.

There is only one sort of *Sunn* or fibre apparently, from which the above are manufactured, and which sells, as stated above, at 2 Rs. a maund in the district, though the fibre of the *Phoolbhanga* is reckoned by the natives the best. The very small quantity of churrus extracted from the Phoolbhanga is also of a superior quality, and fetches a higher price, nearly treble; to prepare it the leaves and plant are rubbed through the hands during the heat of the day, a powerful sun causing the juice to exude more freely. The people in cutting the plant and preparing the Bhung-Churrus are half intoxicated from the strong odour; but the natives do not, as might be supposed, indulge at all in the use of this intoxicating drug. The stalks after the fibre is peeled off are made into torches, so that no part of the plant is lost, yet, though the return is so good, the people do not cultivate it generally from the great labour required in its growth and the preparation of the Hemp, as well as from the cheapness of the different articles, owing to there being so small a demand for export of either the raw material or bags, a very little Churrus only and a few sacks being now and then taken down for barter to the marts at the foot of the Hills.

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* About 10 pence sterling.—H. H. S.

† From 1½ to 4½ pence sterling.—H. H. S.

8.—When Dr. Rutherford held a contract for the supply of Hemp to the Hon'ble Company, and also made extensive purchases of it with other staple articles of produce of the Hills on his own account, during the Gorkha Rule and for a few years after our conquest in 1815, the cultivation of Hemp was very considerable indeed in this district; and in case of any demand being again created, immense tracts would no doubt be sown with it, provided the same plan of advances to cultivators were adopted, giving the grower 4 Rs. a maund for the raw material at his own door; and therefore I have no hesitation in stating it as my opinion that the export might, from the whole Province, be increased to any amount required; for as the numerous tracts of newly cultivated, waste and high forest lands which could be brought under cultivation, (were not perhaps the scanty population found to be a drawback from the paucity of hands to cultivate them, and at present the poverty, and paucity, of inhabitants are against any extensive cultivation,) being fit for the cultivation of the plant, the capabilities are consequently indefinite, though from the above cause perhaps the *practicabilities* might be uncertain.

9. The plan adopted by Dr. Rutherford appears to have been thus; advances through his agents to the landed proprietors and individual cultivators were made during the early part of the year, stipulating for the Hemp being delivered at their own doors at 4 Rs. a maund, and the carriage during the cold season to the marts of Kohdwarra in Gurhwal, and Chilkeea in

Kumaon at the foot of the Hills, (where Goomashtas were ready to receive the Hemp,) being defrayed extra, the Agents either procuring men to take it to the marts in question, or such of the growers themselves as choose to carry down their own quotas to those places respectively, being paid their hire on its delivery, which did not, I imagine, on an average exceed a Rupee a maund—so that the raw material was and is capable of being delivered at those marts for 5 Rs. a maund; and as only a few miles further of land carriage would be required to ship the Hemp into Boats on the Ganges or Ram Gunga for transit to Calcutta, this would not, I should think, double the cost of it. Now as 1 maund and 14 seers are about equal to 1 Cwt., and as the Russian, Polish and Italian Hemp averages 47 and 50 shillings a Cwt. in the English market, the calculation may be easily made by those conversant with these matters, whether the Himalayan Hemp could be imported into England at cheaper rates; and if by its own superior quality to what is stated to be now imported into England from India and found to be such very insufficient substitutes, selling only for 15 to 20 shillings a Cwt., it would be worth while investing any large capital in this speculation either on the part of Government or by private individuals*.

10. Though the Himalayan Hemp is said to be of a superior quality, and it was more extensively cultivated formerly from the Company procuring an annual investment from this Province, it would be very

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* Vide Capt. Kirke's detailed remarks on this subject as published in the Transactions of the Agricultural Society of India.

desirable to ascertain, from the Government records of those days, why the purchases were discontinued, since after our conquest of the Province the Government might have extended their demand for Hemp to any amount; for, as a failure of imports to England from the continent so considerably enhanced its price in the English market, it may be supposed that either the cost of transit, or the inferior mode of preparing the fibre, did not admit of the Himalayan Hemp competing with other European sorts at home, which if these were the objections *then* they must be said still to exist, and therefore our Himalayan Hemp could not become a staple article of export until European Agency directed the natives of this district in the proper course of culture, and in the preparation of a superior fibre to that now existing, so as to ensure the great item of cost in its carriage by land being covered by the superiority of its quality, and finding as ready a sale at home as the Russian Hemp.

11. Hemp which grows in Russia in North Latitude 59° and 55° does not grow or thrive in that of 30° 30′ in the northern pergunnahs of this district, owing, I imagine, to their proximity to the snowy range; though no doubt in lower latitudes than these it thrives best; in the middling ones and out of the influence of frost or snow during the autumn months it might be cultivated, yet it is singular that none is produced in the lower parts of Pergunnahs Nagpoor, Dussolee or in Khas Budhan; [illegible] latter, however, being on the left of the Pindur adjoining to that of Chandpoor, exactly faces the snow range spurs of Nunda Devee, Peak (25,000 feet) so that climate

must have a good deal to say to its growth. These districts are colder no doubt, as the people all dress in blankets which is their staple article of manufacture, and therefore they have no occasion for cultivating Hemp for ropes or bags, the fibre of the "Jurkundaloo," or "Kundaloo" as it is generally called, an immensely large nettle, furnishing them with a good substitute for Hempen ropes, and the wool (or *hair* which it more resembles) of their large flocks of carrying sheep being manufactured in the northern districts into rope, blanketting and bags, as well as the numerous animals of the woods and forests in those parts furnishing them with skins as substitutes for small sacks in which they carry their grain and atta.

12. Dr. Royle states that the natives of the Himalayas send their cloths to the plains for making very durable grain sacks, and that the strongest ropes are made from the Himalayan Hemp (called sel), for crossing rivers, both of which observations, as far as my experience goes, are erroneous, for very few of the cloths are exported now from Gurhwal, though their sacks are nearly as good as English ones, and are remarkably cheap; and the rope called "Seloo," for crossing rivers, &c. is chiefly what is produced from the Malloo creeper, and the "Bheemul" and "Odala" trees, as will be hereafter mentioned in my enumeration of the other articles supplying an excellent fibre, and used by the natives of this district for cordage.

The natives in the plains who cultivate the Hemp, no doubt do so for the sake of the Bhang or what here is called Churrus, and not for its ligneous fibre, though the plant is grown in Gurhwal principally for the latter alone, and the young plants are only slightly thinned but not transplanted.

13. The natives of Gurhwal do not as in Kumaon annually resort to the Turrai with their cattle, for the large tracts of wooded uncultivated wastes afford excellent and sufficient pasturage in this district the year through, and during the summer and rainy seasons the natives take their cattle to those spots, erecting sheds around which the Hemp plant grows most luxuriantly, and if any encouragement for Hemp were afforded, large tracts might be cultivated by these herdsmen which would only employ their leisure time, and afford them a handsome return for their labor.

14. The Hemp seed which produces both the plants called "Gool Bhanga" and that called "Phool Bhanga" is the same, and the average rate of produce of this latter is stated to be generally in the proportion of about one-third of the whole crop. Upon a rough calculation only about 250 beesees are now cultivated with Hemp in this district, from which 1,000 to 1,200 maunds of fibre are produced, which at 2 Rupees a maund for the raw article (both kinds selling for the same) would only shew a return of from 2,000 to 2,400 Rs.; but as the natives do not make much use of it as an article of cordage, having several other excellent substitutes, nearly the whole is manufactured into coarse cloths for dresses and sackings; two-thirds of which are consumed by themselves, and the remainder brought for sale to Sreenuggur and sold in small quantities to the traders from Kumaon, or taken for sale to the marts of Kohdwarra and Chilkeea. All

of them do not extract or collect the Churrus from the plant, and the farmer of this drug obtains his chief supply from the Chandpoor and Choprakot districts, at the very small rate of one Rupee a seer, by making advances to the cultivators; but it is generally sold at the rate of 2 Rupees the seer, and a little is taken by the Kumaon traders or sold at the marts abovementioned—beside I have been unable to ascertain what may be the probable amount of produce of this drug, though no doubt they prepare it for their own private use in small quantities, which may account for the smallness of the amount of the lease of Bhung Churrus Muhal of this district which is only 90 Rs. a year.

15. The Khusseea and Doom class, as above stated, alone cultivate the Hemp—the Rajpoots and Brahmins considering it quite a degradation to have any thing to say to its culture, and I am told that both in Kumaon as well as here it is reckoned a term of severe reproach and abuse for one of the latter class to be told that he cultivates it—or that it is found close to his own door. I am informed that no cultivation or labor bestowed upon the jungle Hemp or wild kind ever renders it fit for any use, though I imagine the cultivated kind must have originally been wild and rendered productive by culture like all other plants—for they have both the same appearance with the exception of the cultivated kind, growing to a greater height and thickness of stem, producing a heavier and fuller seed and not throwing out so many branches.

16. Having, I believe, now stated every thing worthy of note regarding the Hemp Plant, as connected with its cultivation in this district, I will proceed

to notice the other plants employed by the people of Gurhwal as cordage, and which grow wild and are not cultivated—viz. the Bhabur grass*; the Malloo Creeper;—the Bhamul and Odala trees;—the large nettle Jurkundaloo, Kundaloo, or Kulra as it is called in different parts of the district;—the "Koambhee" a tree, the plant "Dhoul Kakussee"—the "Murwa" a creeper, the *Kupassee* or tinder plant; and the *Sun* plant of the plains, which latter is partially cultivated only in the lower ranges of the hills near the plains.

17. Among the abovementioned the Bhabur grass claims the first place from its extensive use and most abundant supply throughout the whole of the hills, affording a most economical substitute as an article of cordage in lieu of others of a more costly and durable nature. All the Jhoolas or Rope Bridges which are erected over the large rivers, where Saughas or wooden planked Bridges cannot be made on all the principal thoroughfares of this district, are constructed of this silky species of grass, the cables of which are of a considerable thickness. These rope Bridges are a very safe means of communication over the large and rapid rivers intersecting different parts of the country, both for travellers and men with loads; and, where the foot-way and sides are properly laced with brushwood, afford an easy enough roadway for loaded sheep—but neither ponies or cattle can travel over them. This grass grows abundantly in all the ravines up the sides of the mountains, and is to be had only for the cutting—but it is not of a very durable nature, though pretty strong when fresh made into ropes. It lasts about a twelvemonth

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* Eriophorum cannabinum of Royle.—H. H. S.

only or a little more, and the people in charge of the rope-bridges are constantly employed in repairing and annually renewing the ropes and stays. The "Chinkas," or temporary bridges of a single cable, upon which traverses a seat in the shape of an ox-yoke, are also sometimes made of this grass, though these are oftener made from the rope of the Malloo creeper, as being stronger and more durable from their being easily let down to soak occasionally in the water. The Bhabur grass is made into ropes without any previous preparation save that of being wetted.

18. The "Malloo" is a large creeper plant growing abundantly throughout the district at the bottom of narrow and hot valleys, along the sides and precipices of rivers and in ravines, forty or fifty yards in length and of considerable thickness, from the bark of which a very strong rope is made. The natives chiefly use it for tying up their cattle, and *seabing* their straw mats with the fresh bark; it also makes capital matches for guns and muzzles for oxen and calves. The leaves which are heart-shaped and above a span in breadth and the same in length, are made into Chattas, or sewed together with twigs for baskets for holding pepper, turmeric and ginger, and are brought to Sreenugger in great quantities for sale, being used by the poor instead of dishes to eat off, and the Bunneeahs wrap up their goods with them; a load of the leaves fetches about 2 annas: the broad flat seed of the pod is also eaten after being fried. This creeper is cut generally in July and August, though it may be cut all seasons, and the outer bark being stripped off is thrown away, the inner coating

being used for ropes, as wanted, by being previously soaked in water and twisted when wet. A large creeper will produce a maund of fibre, called "Seloo," the bark before being used is boiled and beaten with mallets, which renders it soft and pliable for being made into ropes and string for charpays. Though this fibre makes very strong ropes, it is not over-durable, and rots if kept constantly in water; it will last about 18 months, but requires occasional soaking, and I am informed that when coated with tar it does not last much longer. The fibre is not collected for sale, but only for the natives' own use as they may require it; but any quantity, I imagine, might be obtained, and at cheap rates.

19. The "Bheemul" is a small tree growing in all parts from 13 to 15 feet in height, in warm situations, but not very plentifully[*], in the jungles and as single trees on the edges of the terraced fields. The branches of this tree are cut from July till March or at all seasons save the spring. The leaves are given to the cattle, and the sticks are soaked for a month or 40 days in water and when dry are beaten on stones and the bark is stripped off. One tree will give about 5 seers of the inner fibre fit for making into ropes and string, which are used for tying up cattle, and stringing cots with. It is not either very strong or durable, and is not to be had in any quantity, the women make use of the green bark for cleaning their hair.

20. The "Oodala" is a larger tree, the bark of

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[*] Sold in bundles at 2 and 3 annas each, weighing 2srs. 3chks. each bundle. The stock of the Province may average about 50 maunds. It is only manufactured in Gurhwal, very little being made in Kumaon though the tree grows there, having a greater supply of the Malloo creeper.

which makes very strong ropes, and string which is used for tying up cattle and does not rot from exposure to wet. This tree, however, is not so plentiful as the Bheemul even, and each tree will only give about a seer of good fibre. It grows in the valleys of the southern parts of the district and up the ravines bordering on the Turrai. The Bheemul and Oodala ropes get stronger from wet for the time, but do not last above 18 months if kept constantly exposed to the weather.

21. The large nettle called Jurkundaloo, Kundaloo and Kulra, grows chiefly in the northern parts of the district in great quantities, it also grows in the middle ones, and from its fibre the natives make rope for tying up their cattle and snow sandals. One bundle will produce about a seer of fibre, but it is not collected for sale. The plant grows about 8 or 9 feet high, and the stalks are about the size of a finger in thickness. It is cut in the cold season and the stalks are soaked a few days in water before the fibre is stripped off from the thick end like Hemp.

22. The Koombhee is a tree growing in the ravines bordering on the Turrai, and from the inner bark a fibre is collected which makes matches for guns. It is collected and sold at the marts at the foot of the Hills, but in no quantity.

23. Dhaulkakussee and Nurwa are plants and creepers, growing in all damp and cold situations in the ravines, from which a very strong fibre is produced and is manufactured into nets and fishing lines, and the bark I am informed is stripped from the thin end of the stalk. The small nets sold in Sreenugger average from eight annas to a Rupee.

24. The "Kupassee," as it is called from its leaf being similar to Cotton, is I believe, the tinder plant, and which grows in abundance on the tops of all ridges of the mountain of any height and out of old walls. It is a small plant with a broad leaf, which yields a fibre like Cotton, and the white skin is stripped off the bark of the leaf. The leaves are plucked in July and August, one maund of which will give about a seer of Kupassee which is torn off the leaves the day they are plucked and given to a weaver for being made into a thread from which small bags are made, the bags sell about 6 annas each, but will not bear wet, and the thread is very weak and rotten. It takes 4 or 5 men to collect the Cotton from a maund of leaves, but it is not in very general use. The fibre also makes very good tinder. The plant is not collected for sale, but only by the natives for their own use.

25. The Sun plant or Hemp of the plains is also grown by the natives in the Chandee Doon and Purgunnahs bordering on the plains, but in no great quantity, and only with a view to their own use, and as every thing connected with this plant is so well known I need not make any further mention of it.

26. Agreeably to the wishes of the Hon'ble Court of Directors, I have the honor to transmit herewith specimens of the Hemp seed and cloths as produced and manufactured from the Hemp plant of this division of the province, together with specimens of the other principal articles used in cordage only by people of British Gurhwal, ticketted and numbered as follows.

No. 1.—A small bag of Hemp seed.

No. 2.—Specimens of the Hemp made from the

Gool-Bhunga, with a piece of rope manufactured from the same—from the different Districts.

No. 3.—Specimen of the Hemp made from the Phool-Bhunga, with pieces of rope manufactured from the same from the different districts.

No. 4.—Specimens of the sackcloths, and bags, manufactured from the Hemp grown in Gurhwal from the different districts.

No. 5.—Specimen of the thread of the Hemp with the spindle on which it is made, from which the sackcloth is wove.

No. 6.—Specimen of the Bhabur grass and rope.

No. 7.—Specimen of the Malloo fibre and rope with pod of the seed of this creeper.

No. 8.—Specimen of the Bheemul fibre and string, and sticks of the branch from which the fibre is stripped.

No. 9.—Specimen of the fibre of the large nettle.

No. 10.—A specimen of the bags and thread manufactured from the tinder plant.

No. 11.—A small parcel containing a minute portion of each article as specimens, which are detailed in the Report, with the exception of specimens of the matches and fishing nets of the Koombhee and of the Dhoulkakussee and Murwa.

NOTE.—The specimens of Hemp which have been received from Kumaon have been inspected by some members of the Flax Committee, and estimated as well worth £35 a ton, at the present moment (October, 1841.) Major Corbet in a note recently received states, that he considers the article could be laid down at a cost of 10 per cent. *less,* than that given in the estimate of Captain Huddleston.—H. H. S.

*** Just as the foregoing valuable paper of Captain Huddleston's was being printed off the accompanying most acceptable information was received from Major Corbet. It is appended to make the communication on this highly important Report on the Hemp cultivation of the Kumaon Province complete.—H. H. S.

Lohoo Ghat, 9th October, 1841.

MY DEAR SIR,

In reply to your letter regarding Hemp, I have the pleasure to give you the information I have been able to collect. Hemp grown in this part of Kamaon is now procurable at two rupees eight annas per maund*, but as it is only cultivated to meet the wants of the inhabitants, I do not think more than a hundred maunds (about 4 tons) could be collected, and the cooly hire down to Sunnea would be about thirteen annas a maund. The Teshaldar informs me that the Zemindars of this district would gladly enter into agreements to grow and deliver Hemp at Sunnea at four rupees a maund. (8 shillings for 80 lbs.)

Hemp deliverable at Chilkea in former times was supplied at four rupees a maund, and at which price I think it could now be procured, and in much greater quantities than either at Koledewarra or Sunnea. A Mr. Wilkin, who has been employed at some copper mines about six days' journey from Chilkea, informs me that he always procured the Hemp he required for his works at 19 and 20 seers, of 100 sonat rupees each seer, per rupee ; and some of the Sepoys of my corps who come from that part of Gurhwal say the Zemindars carry the Hemp down to Chilkea, and there dispose of it at two rupees the Company's maund.

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* Five shillings for 80 lbs. avordupois.—H. H. S.

Captain Huddleston is of opinion that the Zemindars would not be induced to grow Hemp and deliver it at Koledewarra under five rupees the maund, which appears high considering the price it is now selling at in other parts of the province.

Seed is now selling in Gurhwal at from 26 to 30 seers the rupee, and here from 20 to 23 seers the rupee, and I have no doubt the natives would deliver it at the foot of the hills at about a rupee a maund more than it sells for in the villages. The carriage from the foot of the hills to the places of embarkation would be the same as for Hemp. Grain in the Upper Provinces being carried on hackrees (carts) furnished with large suleetahs, (sackings) thereby doing away with the necessity for bags, and on board the boats with the help of a few mats, it might be stowed in like manner, and be filled into bags on arrival in Calcutta.

At the following rates hackrees (carts) are procurable in Rohilcund including back hire.

		per diem.	*burden.*
4 bullock hackrees (carts)		1 R. 8 as. (3 shillings)	20 to 25 mds. (nearly a ton.)
3 ditto	ditto	1 R. 2 as. (2*s* 3*d*)	12 maunds.
2 ditto	ditto	0 12 as. (1*s* 6*d*)	8 to 10 maunds.

Boat hire from Bareilly to Calcutta is about 20 Rs. (£2-0-0) per hundred maunds, (4 tons,) a short time ago a thousand maund boat was procurable for 175 Rs. now 225 Rs. are asked.

Boat hire from Anopshuhur, the same from Sookurtal; the person I wrote to at Meerut who advertizes to supply boats, charges for a 600 maund boat Rs. 180, and for a 1000 maund boat 291 Rs. being about 50 Rs. per boat more than Captain Kirke mentioned the hire to be in his report—consequently I think they might be procured for less.

The Hemp collected at Sunnea would be embarked at Bareilly—that collected at Chilkea at Anopshuhur and the Kotedewarrah at Sookurtal.

Hackrees take four days from Sunnea to Bareilly, Six days from Chilkea to Anopshuhur, and four days from Kotedewarra to Sookurtal.

The following is a rough sketch of what I think Hemp might be delivered in Calcutta for :

From Kotedewarra.

Cost of 1000 maunds Hemp (37 tons,) ...Rs.	5000 (£500)
Hire of 1000 maunds boat, ...	291 (£29)
45 carts four days at 1 R. 8 As. per diem, ...	270 (£27.)
	5561 (£556)
Add 10 per cent. for Superintendent, Gomashtas, &c. &c., ...	556 (£55)
	Rs. 6117 (£661)

From Chilkea.

Cost of 1000 maunds Hemp, (37 tons)	4000
Hire of 1000 maunds boat, ...	225
45 carts, six days, at 1 R. 8 as. per diem, ...	405
	4630
Add as above,..	463
	Rs. 5093 (£509)

From Sunnea.

Cost of 1000 maunds Hemp, (37 tons)	4000
Hire of boat, ...	200
45 carts four days at 1 R. 8 as.	270
	Rs. 4470
Add as above, ...	447
	Rs. 4917 (£491)

The Hemp the Natives sell is merely taken from the reed and not dressed in any way; however that could be easily remedied if a person was sent up who understood the process and would put the Natives in the way of doing it.

Should any person think of speculating in the Hemp of this province, it will be absolutely necessary to have an active Agent on the spot to make advances in February or March, that the cultivators may have time to prepare land in proportion to the sums they may receive; without advances the Natives will never be induced to cultivate more than they actually require for their own immediate use.

One Gomashta (Agent) I should think would be sufficient to superintend the advances for Hemp deliverable at each place, with assistance when receiving the article and transporting it to the river. In Dr. Rutherford's time the advances were made to respectable people, on sufficient security, to deliver the Hemp at four rupees, who again bargained with cultivators. The receivers of advances receiving no other remuneration than what they could make by the transaction. If the purchase of Hemp is revived, I am of opinion it would be cheaper and much more satisfactory to the cultivators, to have the advances made direct into their hands, and which would induce them to exert themselves more in the cultivation than where ground down by a Native contractor, who would render them dissatisfied to the injury of his employers.

I remain, My dear Sir,
Yours very truly,
STUART CORBETT.

H. H. Spry, Esq. M. D. &c. &c.

Art. XXX.—*Official information connected with the Growth and Sales of Assam Tea in London.*

[Read at the Meeting of the Society of Nov. 11, 1840.]

To H. H. Spry, M. D., *Secretary to the Agricultural and Horticultural Society.*

Revenue.

Sir,—In reply to your letter of the 17th instant, I am directed by the Right Hon'ble the Governor of Bengal to forward, for the information of the Society, extracts from the Hon'ble Court of Directors' Despatch No. 4 of the 29th April last, with copies of the papers mentioned in para. 7 on the subject of the Assam Tea shipped to England on board the "Margaret."

I have, &c.
(Signed) J. H. YOUNG,
Dy. Secy. to the Govt. of Bengal.

Fort William, the 25th August, 1840.

(COPIES.)

Extract of a letter from the Hon'ble the Court of Directors to the Government of India in the Revenue Department, dated 29th April, 1840, *No.* 4.

Para. 4. Of the Tea shipped by you on board the "Margaret," the whole of which arrived in good condition, we selected ten tea boxes for distribution, which afforded great and general satisfaction, as evincing a very considerable improvement on the consignment received per "Calcutta" in 1838.

5. The remaining eighty-five packages were sold by public auction on the 17th March, and we transmit to you a catalogue shewing the result of the sale, and containing a running commentary by Mr. J. W. Thompson on the character of each chest.

6. Although the prices which the result of the sale exhibits, do not approach to those obtained for the eight packages sold in January, 1839, they are nevertheless still excessive with regard to the relative value of this Tea as compared with Tea of a similar character and quality imported from China.

7. The opinions of brokers and other practical persons, to whom we submitted specimens of the Tea, and which are also transmitted with this Despatch, will enable you to form a more correct judgment on this subject, supposing Assam Tea to be shipped in such quantities as would place it in fair competition with China Tea.

8. It is very satisfactory to find that the opinions of the brokers, and the result of the sale, shew that the Tea manufactured by the Takelas, without the aid of the Chinamen, are confirmatory of the fact that the whole process of manufacturing the article is readily imparted to the Natives, and that no obstacle of this nature will oppose itself to an extensive cultivation.

9. We have not as yet received any specimen of Green Tea, but we perceive some samples have been sent from Assam which were forwarded by you to the Governor General. It appears however from the Report of Mr. Bruce, dated the 10th June, 1839, that Green Tea was at that period under process of manufacture from the same shrub as that from which the Black Tea is manufactured, the result of which will tend to elucidate a point of considerable interest and importance connected with this part of the subject, and we shall expect shortly to receive some specimens.

10. With regard to the second process which it appears it is necessary that Green Tea should undergo, in order to complete its manufacture, and which it is suggested might remain to be effected in London, this is a point which will of course be left for the future consideration of those parties who may hereafter make the article one of merchandize. It will be desirable however, that whatever specimens you may forward to us, should be perfected in regard to manufacture, previously to their shipment from India. At the same time we think it necessary, in the infancy of this manufacture, strictly to prohibit the use of any deleterious

matters as colouring materials of Green Teas, and if Green Tea cannot be produced without the use of such materials, we desire that the attempt to produce it may be entirely abandoned.

11. You will continue to consign to us, making such reserve as you may consider necessary, the produce of your experimental establishment, and in other respects you will be guided by our instructions under date the 19th February, 1840.

12. So far as regards your advices, and those received from the Government of Fort St. George, as noted in the margin, (excepting to express one general approbation of the proceedings to which they respectively refer,) we have only to lament the defective condition in which Dr. Wight found the supply of Tea seeds received from Assam, and have to call your attention to the instructions conveyed to you in the 18th para. of our letter dated the 23rd August, (No. 11) 1837.

Letter from Government of India, dated 8th July, (No. 9) 1839, (whole.)
" " 20th September, (No. 13) (whole.)
" from Government of Fort St. George, dated 4th June, (No. 9) 1839, para. 4.
" " 2nd July, (No. 13) 1839, paras 2 and 3.
" from Government of India, dated 25th November, (No. 14) 1839, paras. 13, 14, 23, 24, and 27.

16. We approve of your having declined to extend the operations of the experimental establishment under Mr. Bruce, further than by sanctioning the employment of two or three Native Overseers, with such an additional number of Coolies, as could be efficiently and usefully employed by the Tea-makers, already authorized, with a view to the objects contem-

plated in your Letter to the Tea Committee, dated the 21st October, 1839.

(True Extract.)
(Signed) F. J. HALLIDAY,
Junr. Secy. to the Govt. of India.

Opinion of Brokers and others on Assam Tea received per Margaret, 4th January, 1840.

Wm. Jas. Thompson, 38, Mincing Lane, 22nd January, 1840—

The "Assam Souchong" is of a coarse and not properly twisted leaf; it has very good flavor, but more of Congou than Souchong.

The "Assam Paho" is of a rather large but perfectly twisted leaf, with very little of the Pekoe flavor, this sample is as great an improvement on those of last year as could well be effected; it is too much fired, yet the flavor is very good, equalling that of Congou of the Pekoe kind.

The sample from the Chinese plants is tolerably well made, though not sufficiently twisted; in flavor it is superior to the other samples.

The present relative value of the

Assam Souchong is, ...	2*s*.	11*d*.	per lb.
Assam Paho, ...	3	3	„
Tea from the China plant, ...	3	0	„

But our market is in a state of too great excitement for these prices to be taken as a guide when looking prospectively; in ordinary times the Assam Paho would, from its superior make, rank with the first class of Pekoe resoks, which the East India Company used to give 30 and sometimes 32 taels per picul for; the Tea from the China plant would rank with Souchong Congous at 26 or 28 taels, while the Assam Souchong from the imperfect state of the leaf would not be rated above common Congous. say relatively 22 to 24 taels per picul.

Joseph Travers and Sons, Swithin's Lane, 24th January, 1840—

No. 1. *The Chinese Plant grown in Assam.*—Of the finest character as Padrae Souchong—of full strength as well as fragrant and delicate in flavor—worth in this market a year ago from 3*s*. to 3*s*. 6*d*. in bond—now probably from 4*s*. 6*d*. to 5*s*. This specimen seems to prove satisfactorily, that the soil of Assam is well adapted to the cultivation of Tea.

No. 2. *The Assam Plant marked "Paho."*—Of the Pekoe kind, strong and well-flavored, excepting that it tastes a little coarse or burnt with a strong infusion—worth in this market a year ago from 2*s*. 3*d*. to 2*s*. 6*d*.—now probably from 3*s*. 6*d*. to 3*s*. 9*d*. per lb.

No. 3. *The Assam Plant marked "Souchong."*—Good Tea of the Souchong flavor, strong and true—rather more coarse or burnt than sample No. 2—worth in this market a year ago from 2*s*. to 2*s*. 3*d*., now probably from 3*s*. 3*d*. to 3*s*. 6*d*.

General Remarks.—The above valuations are made upon the supposition of a general and steady supply of Assam Tea to this market in *quantity*, with reference to which we desire particularly to draw your attention to our opinion, as stated of the probable value of these samples under such circumstances a year ago, as one which we think presents a better standard for calculation than the value at this time under the present circumstances of the China trade.

The two Assam samples, which we number 2 and 3, are undoubtedly the true plant, and of excellent strength and flavor, wanting only continued care in the cultivation to make them equal in quality to the best Teas of the sort from China. The manufacture so far deserves the highest praise, though it may be improved still further, and in this as well as the flavor there is a marked advance upon former specimens. The selection of the leaf we think wants more care.

Judging by the specimens, we suspect, that the leaves have been plucked at different periods, and then thrown together and manufactured indiscriminately, whereas they should have been taken through the season at the different stages of growth, and manufactured apart from each other, the younger leaf as being more tender, with the greatest care for the finer qualities, and the older and tougher leaf requiring perhaps less attention, for the inferior qualities.

Many of the leaves also of these two samples, especially of No. 3 are very large and fibrous, probably many years' old (taken from shrubs of many years' growth) and we think have injured the flavor. This may be avoided by confining the selection in future to plants that are, according to Chinese practice, cut down once a year, and upon which therefore, there are only the leaves of the season.

Wm. Jas. Bland, 28, Fenchurch Street, 27th January, 1840—

The three samples which I received on the 17th, I would thus describe—

The "Souchong" has not what we know as *Souchong flavor*, but has mellow true "blackish leaf" flavor in a high degree, modified however by pungent Aukoi, which may in part be produced by the method of firing.

The "Paho," which word I take to signify (as in Chinese "Pekoe" or "Pecco") *feathery* or *downy* Tea, is very strong and full flavored, but would not be recognized as that so well known here as "*Pekoe* flavor," it having a harder, or kind of Caper flavor blended.

The third sample "China Tea manufactured in Assam," is a very peculiar specimen, viz. that of which the old-fashioned Caper Tea used to be made, its strength and high Aromatic flavor is unequalled by any other kind—"*Caper*," such as I describe, has not been seen in England for the last ten or fifteen years, but we have latterly got a few chests of Houlon, Aulong or Eulong, bearing hard upon it.

Now these are mere critical opinions, and may be disputed or overthrown, but the great point at issue may be thus *practically* elucidated; several parties to whom I have shewn these specimens, have asked "Where is the *common* Assam Tea"—"are there no *Boheas* among them?"—perhaps the most powerful gratuitous testimony which could be borne is the fact, that *no one* would think of comparing these with any but the finer grades of China Tea, and this having from the first been my practice, I am prepared to say that they stand such comparison *most satisfactorily.* I have now to allude to a circumstance necessary to be especially guarded against, I mean any discrepancy in the bed or parcel of Tea bearing the same chop. I do not mean to say that it does exist, but *two samples* handed to me as sent from you on the 24th instant establish quite a different position. The "Paho" in this instance, is the ripe, rich, blackish leaf flavored Tea, and the Souchong the quieter kind, though the leaf of the latter is the most natural by far of all the specimens I have yet seen, having scarcely more of the white tips than is often found in our direct "Pekoe kind Congous." I mention this as a safeguard against what would be more detrimental to the character of this article *with the Trade* than any thing else, viz. an irregularity of quality, where uniformity ought to be looked for.

The value for the Tea at the present moment, would be in my judgment about 3*s.* 6*d.* (or rather more) per lb., the differences just mentioned, preclude a graduated or comparative estimate, but I give this average valuation, reckoning 2-11 as the current quotation for common Congou, and 3-2 to 3-4 for fine, the *highest* quality, and Souchong rating also at 3-6 to 3-9 per lb. it may be as well however, to add that its *beauty* as well as its novelty will cause it to sell at about 1*s.* per lb. more, say at 4-6 and upwards.

NOTE.—The best criterion that whatever modification these Teas have undergone by *firing,* no *injury* has been done to the substance, is the pellucid liquor given out on infusion, and the complete absence of the charcoaly scum ordinarily left on the leaves of common black Tea.

Query. Will not suitable choice of soil, aspect, and age, afford the varieties of green Tea ? The botanical characters do not differ at all in what are termed the black and the green plants, as cultivated in the black and the green Tea *Countries* in China : two circumstances favor this idea, 1st, the specimens impart only a green* color to *spirit* ; 2nd, and whatever kinds of Tea are grown in Homan or near Canton, degenerate into faint wossing kinds.

Query. Did the large Paho chest already emptied contain 70 pounds or 80 pounds of Tea ? If the former only, the looseness of the packing would occasion deterioration of quality by long keeping or on a bad voyage ; in every other respect the packages are most judiciously provided.

Richard Gibbs, White Hart Court, January 28th, 1840—

I have very carefully tested the Assam samples of " Paho" and " Souchong," with those of last year's import, and find them to possess nearly the same appearance and general qualities, with a little more fragrance and a slight improvement in the manipulation, or twisting of the leaves ; with these exceptions I can trace no material variation in their quality.

I have also with equal care, compared the samples of the Native plant with that of the China plant grown in Assam. I find the latter to possess all the

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[*] This can only be ascertained after repeated washings.

richness, strength and flavor of the very finest kinds imported from China. Combining in flavor the finest Oolong and Padræ, with a fragrance the Native plant does not possess ; the leaves, after infusion, present also a very different appearance ; those of the China plant are of a lively ripe yellow color, small, perfectly serrated, and nearly all whole ; those of the Assam are of a dark brown, large, serrated, but comparatively imperfect or broken.

I was last year led to the conclusion that the difference existing between the samples then before me and the Tea as imported from China, was mainly the consequence of inexperience in the manufacture ; that opinion I feel it now necessary to qualify, although I still think some of the properties of the plant are partially destroyed by *over-heat.* The sample of the China plant grown on the same soil, and manufactured by the same process in Assam, proves beyond question, that this is not the essential point of difference ; it may more reasonably be found in the relative ages of the two plants (a probability borne out by the appearance of the leaves when infused)—the China plant expressly procured for the purpose of comparison, being properly cultivated and the leaves necessarily gathered while young, while the samples of the Native plant bear evidence of indiscriminate gathering, the plant from age and want of proper culture having naturally become coarse and devoid of fragrance,—in this view, to my idea, the difference may reasonably be accounted for. These considerations may be more or less worthy of the attention of the Superintendents of the manufacture in Assam—

they at least have it in their power, by the even culture of the two plants, to satisfy themselves of their identity—should a fair trial evidence the contrary, there can be no doubt of the propriety of propagating by every means in their power, the China, in preference to the Native plant.

In either case I would unhesitatingly assert that any quantity of an article of equal value with the sample of the China plant of Assam manufacture now submitted for opinion, would find as ready consumption and give as general satisfaction as the direct importations from China.

Sample No. 2, of Assam Souchong.

Large black uncurled leaf, with some Pekoe ends, dull and heavy to the eye, too highly fired, rather coarse, burnt, fresh, with some fragrance, but of a different character to Chinese Souchong.

More like Pekoe than Souchong.

Rather inferior to the Pekoe sample No. 1, rather fresh.

Larger than Chinese Souchong, mid-rib very tough.

Sample No. 3, of Tea from Chinese Plants.

Wiry, long leaf with the Pekoe characteristics, not markedly dissimilar to Chinese Tea, fragrant but rather herby—like Chinese Caper or orange.

Pekoe Tea from the Oankhy district.

Like Pekoe Tea.

Agrees with the smell.

As Chinese Tea.

Usual characteristics of Chinese Tea.

The question, "Is the indigenous Assam plant a variation or of precisely the same genus as the Chinese Tea shrub?" is one which will naturally occur upon a perusal of the foregoing examination. That the leaf varies in its properties from that of the Chinese, is apparent from the scent and flavor of the samples Nos. 1 and 2, differing so considerably from the Chinese, as well as from sample No. 3, manufactured from plants procured from China, and which coincides with all the properties of the Chinese Tea. This important question may be satisfactorily answered, and the variation attributable solely to the care and attention which the shrubs of No. 3 sample must have received in their culture, while those from which Nos. 1 and 2 are specimens, may have been in a wild uncultivated state, and which may only require the same degree of care to develope exactly the same qualities as the Chinese plant.

Upon the solution, however, of this question rests one of the most important advantages which is to be derived from the manufacture of the leaves of the Native plant; that the soil and climate of Assam are favourable to the growth of the Tea shrub, the specimen No. 3 will, I think, satisfy all judges of the article, and should the Assam plant only require cultivation to raise it to the same perfection, I confidently anticipate that in time it will compete with, if not supersede, the Chinese growth and manufacture for the consumption of this country; on the other hand, should the indigenous plant prove to be a variation of the Chinese, which I am strongly disposed to imagine it will, and incapable of a much higher state of perfection than exhibited by the two samples, still to the extent of many thousand chests annually it will, I have no doubt, find ready purchasers, the quality, such as it now is, being manifestly superior to that of the inferior Chinese Tea, and also from its peculiarities, being valuable for mixing with many kinds of that article.

Without more exact data for having formed my opinions, some of these remarks may appear supererogatory, but they are not strictly so, as they tend to explain the conclusions which I have drawn upon the general question.

Upon minor points for consideration, I beg to draw attention to the picking and process of manufacture, neither of these being quite in conformity with the Chinese method in the picking, I judge from the absence of the tender shoots with their cluster of leaves partially developed observable in the Chinese Pekoe, and from the fully expanded and occasional coarse leaf to be seen in the Assam Souchong, that this process has been conducted at a later period in the spring than it is in China, and in the manufacture the touching or firing has evidently been more frequent or more intense than in the Chinese process, whereby the Tea has acquired an objectionable flavor, and the leaf made liable to injury from its highly dried state.

The nature and thickness of the wood employed for the packages, is another point which it occurs to me should be remarked upon, as also the equalization of the size and weight of the packages; the wood should not be too brittle or too hard, nor the packages of greater substance than is necessary for the weight they contain, and for the transit which they must undergo; and uniformity in the weight of the packages of distinct parcels is of the utmost importance in arriving at the net quantity, the tare for the whole parcel being calculated upon an average formed from a very few packages; this subject was regarded by the East India Company of such moment, that any great variation in the tare of a parcel was sufficient ground for rejecting its purchase. These suggestions, with the affixing of distinct marks, such as with the Chinese, the chop character, upon the packages which contain Tea of the same packing, or of the same process of manufacture, I recommend for consideration in future investments.

Before closing these remarks, I cannot but refer to a previous report of mine, of 29th August, 1838, upon a sample of Assam Tea with which I was favored, and which I must candidly admit, does not convey the same favourable opinions of the quality, or of the importance of the manufacture as I now entertain; but it must be observed that, not only upon the previous, as well as upon the present occasion, the observations which I have made, must be taken as referring solely to the condition at that time of the manufacture, as exemplified in the samples, and must not preclude different conclusions upon this very interesting subject, should different facts be exposed in the subsequent culture and manufacture of the article.

Mr. Stevenson, 37, Upper Grosvenor Street,
January 29th, 1840—

Considers both specimens good, both the Souchong superior to the Paho, and from his knowledge of the preparation and drying of medicinal herbs, he is of opinion that both Teas now submitted to him are capable of great improvement by a more careful and scientific manufacture. He thinks that too great a degree of heat, air and light, is used in the drying of the leaves, whereby some portion of the fine Aroma of the plant is decomposed and lost. The specimens before him in point of strength are superior to what he is now paying 7*s*. per pound for in his household consumption.

Green, Wilson and Burton, Queen Street Place,
6th February, 1840—

We beg to state that on trial we find a very considerable improvement on the quality of those which were imported last season, as to its curing, its flavor, and the character of the leaf from improved culture.

The Souchong we consider very full and rich, of Pekoe Souchong flavor, and strong but slightly coarse as *fine Tea*.

The Paho we call *strong* and full, very *little* burnt, or Pekoe flavor, with slight coarseness : the slight coarseness we think arises from their great strength : we have rarely ever met with so much strength, combined with flavor in fine Tea. Such Tea would command a ready sale in any quantity.

In steady markets when good sound Congou or Pekoe flavor would sell at 2*s*. 6*d*. to 2*s*. 9*d*.—we think each sample would bear the relative proportion of 3*s*. 3*d*. to 3*s*. 6*d*.—at present we can scarcely value them, but suppose the value at market price as China Tea, is this day 4*s*. to 4*s*. 6*d*.

With the quality we are well pleased, and we are confident we could introduce it into our trade with much satisfaction to our friends and the consumers.

Twinings and Co., Strand, 12th February, 1840—

We think that the samples of the last importation manifest an improvement in the manufacture, as compared with those of the preceding.

Both in the "Souchong" and "Paho" there is still prevalent a burnt and rather coarse flavor, which is unpleasant, and which it is very important to correct, as it interferes with the natural and agreeable flavor of *Tea*, and if continued, would substitute, with the consumers, a bad instead of a good taste for the article itself.

The Souchong contains many large and open leaves, and several which, upon examination, after infusion, appear as if sufficient care had not been observed in the selection. The prevailing character of this Tea is in our opinion, strength: but it has much to acquire before it attains that peculiarly fine flavor which *true Souchong possesses*.

The "Paho" has notwithstanding the burnt flavor, a *degree* of softness which is characteristic of "Pekoe," and shows perhaps, more care in the preparation.

The sample "from Chinese plants" bears a resemblance both in leaf and flavor to the *Aukoe*, which was formerly imported in private trade, and which, however it may have been approved occasionally, never was considered as of the most serviceable description.

Upon the whole we think, that the recent specimens are very favorable to the hope and expectation, that Assam is capable of producing an article well suited to this market ; and although at present the indications are chiefly in reference to Teas adapted by their strong and useful flavor, to general purposes, there seems no reason to doubt, but that increased experience in the culture and manufacture of Tea in Assam, may eventually approximate a portion of its produce to the finer descriptions, which China has hitherto furnished.

(True Copies.)
(Signed) F. J. HALLIDAY,
Jr. Secy. to the Govt. of India.

Revenue Department,
Fort William, the 25th August, 1840.

(True Copies)
J. H. YOUNG,
Depy. Secy. to the Govt. of Bengal.

PRICES REALIZED IN LONDON EXCLUSIVE OF DUTY.

Tingri Tract.

		s.	*d.*
Pekoe....	3 chests, the average price of which per lb. was	6	10
Souchong	1 ditto, ditto ditto ditto	7	1
Pekoe....	1 ditto, ditto ditto ditto	9	5
Songperry	1 half, ditto ditto ditto	8	2

		s.	d.
Souchong	2 chests, average price per lb.	8	5
Pekoe	1 ditto, ditto ditto ditto	9	6
Toychong	1 ditto, ditto ditto ditto	4	0
Pekoe ...	2 ditto, ditto ditto ditto	8	4
Souchong	4 ditto, ditto ditto ditto	8	6½

Kahung Tract.

Pekoe ...	7 chests, average price per lb.	8	10
Souchong	7 ditto, ditto ditto ditto	8	7
Pekoe ...	2 ditto, ditto ditto ditto	10	9½
Souchong	1 ditto, ditto ditto ditto	8	7
Pekoe ...	2 ditto, ditto ditto ditto	10	3
Souchong	1 ditto, ditto ditto ditto	8	9
Pekoe ...	3 ditto, ditto ditto ditto	10	2¼
Toychong	1 ditto, ditto ditto ditto	4	9
Pouchong	3 ditto, ditto ditto ditto	8	10¾
Souchong	1 ditto, ditto ditto ditto	9	0
Pekoe ...	1 ditto, ditto ditto ditto	8	11
Souchong	3 ditto, ditto ditto ditto	8	11¼
Pekoe ...	1 ditto, ditto ditto ditto	8	10
Souchong	3 ditto, ditto ditto ditto	8	11
Pekoe ...	1 ditto, ditto ditto ditto	8	11
Souchong	2 ditto, ditto ditto ditto	10	10
Toychong	2 ditto, ditto ditto ditto	4	9½
Souchong	3 ditto, ditto ditto ditto	9	1

Dinjuee Tract.

Pekoe ...	1 chest, average price per lb.	9	8
Souchong	3 ditto, ditto ditto ditto	9	4¼
Pekoe ...	1 ditto, ditto ditto ditto	9	1
Souchong	2 ditto, ditto ditto ditto	9	3½
Pekoe ...	1 ditto, ditto ditto ditto	9	0

		s.	d.
	Chubwa Tract.		
Souchong	2 chests, average price per lb.	9	4
	Chacka Tract.		
Souchong	2 chests, average price per lb.	8	8½
Ditto	1 Box, ditto ditto ditto	10	7
	Ningroo Tract.		
Souchong	1 chest, average price per lb.	8	7
Pekoe ...	1 ditto, ditto ditto ditto	9	4
Souchong	2 ditto, ditto ditto ditto	8	9½
	Jugundoo Tract.		
Pekoe ...	2 chests, average price per lb.	9	7½
Souchong	2 ditto, ditto ditto ditto	9	2½
	Kajudoo Tract.		
Pekoe ...	3 chests, average price per lb.	9	3¾
	Dingri Tract.		
Minchew	1 Box, average price per lb. ...	11	1

ART. XXXI.—*Experiments made in England under the supervision of the Hon'ble the Court of Directors on a new method of Ginning E. I. Cottons—Declaration of Approval by the High Authorities in England of the Operations of the Agricultural and Horticultural Society of India.*

[Read at the Meeting of the Society on Nov. 11th, 1840.]

To Dr. H. H. SPRY, *Secretary,*
Agricultural and Horticultural Society.

Revenue. SIR,—By direction of the Right Hon'ble the Governor of Bengal, I forward, for the information of the Society, some interesting papers on the subject of Cotton-ginning experiments at Liverpool and Manchester, carried on under the inspection of the Chairman and Deputy Chairman and certain of the Directors of the Hon'ble Court. These it is thought by His Lordship will interest the members of the Society, and the publication of the results of the experiments, which are regarded with so much interest in England, cannot fail to produce advantage here, and to assist to the attainment of the important object in view.

2. I am directed to take this opportunity of mentioning that, in consequence of the approval which the operations of the Agricultural and Horticultural Society have received from high authorities in England, and the increasing attention now directed in that country to the development of the resources of India, and the acquisition particularly of such knowledge as it is the purpose of the Society to collect and diffuse, His Lordship proposes to transmit regularly to the Hon'ble Court of Directors forty copies of the monthly Transactions of the Society.

3. You are requested therefore, to cause forty copies to be sent monthly to this Office for the purpose indicated.

I have the honor to be, Sir,

Your obedient and humble Servant,

FRED. JAS. HALLIDAY,

Secy. to the Govt. of Bengal.

Fort William, the 29th September, 1840.

It having been arranged that an experiment should take place at Liverpool, on Friday, the 17th July, at which the Chairs had resolved to be present, in order to test the capabilities of the machines procured by Captain Bayles from the United States, and to ascertain through the medium of persons selected from among the most intelligent Merchants, Mechanics, Cotton Manufacturers and Brokers, whether the machinery is with or without further modification, well adapted to the efficient cleaning of India Cotton without material injury to the staple;—the Chairs, accompanied by Sir James Lushington, the Chairman at the time when the mission of Captain Bayles was resolved on, Sir Richard Jenkins, the late Chairman, and Sir Robert Campbell, proceeded to Liverpool, where, as well as in Manchester, it was found the subject had excited considerable interest and attention.

The following memorandum will shew the details of the experiment which afforded much gratification to the Directors, and to all assembled on this interesting occasion.

Permission having been given, at the request of several leading persons in Manchester, to remove the machinery from Liverpool to that town, in order that it might undergo more minute inspection by experienced Mechanics, &c. a further trial took place there on Friday the 31st July, attended with results, if any thing, more favorable than those here detailed.

Memorandum shewing the details of an experiment made at Fawcett's Manufactory, Liverpool, with the Saw Gins, procured by Captain Bayles from the United States, also with one of Whitney's Saw Gins, and a Hand Gin constructed by Dr. Jones.

FIRST EXPERIMENT.

21 lbs. of Surat Kupas or unclean Cotton were put into each of the Gins, numbered respectively.

Carver's	*Jones's*	*Brooks's*	*Whitney's*
(60 *Saws.*)	(40 *Saws.*)	(60 *Saws.*)	(60 *Saws.*)
1	2	3	4

The following is the result:

	Weight of Cotton when ginned.	Weight of Seed.	Waste.	Time consumed in ginning.	Value when ginned.
					d.
No. 1	5 lbs. 5 oz.	15 lbs. 1 oz.	5 oz.	7¾ min.	4½
No. 2	5 lbs.	14 lbs. 10 oz.	4 oz.	16½ min.	4
No. 3	5 lbs. 3 oz.	12 lbs. 8 oz.	2 lbs. 1 oz.	8 min.	4¾
No. 4	4 lbs. 10 oz.	15 lbs.	10 oz.	14½ min.	4

SECOND EXPERIMENT.

A small quantity of the same Cotton was put into Jones's Hand Gin, worked by two men. It performed the work of cleaning to the satisfaction of the umpires who pronounced the Cotton worth 4¾*d* per lb., but the process is too slow to be of any practical use in cleaning the short staple of India.

THIRD EXPERIMENT.

7 lbs. of Bourbon Cotton were put into Gins numbered respectively 2 and 3. The following is the result:

	Weight when ginned.	Time consumed in ginning.	Value of Cotton.
No. 2	1 lb. 14 oz.	3 minutes.	9½*d.*
No. 3	2 lbs.	8 minutes.	8½*d.*

Experiments were next made with a Roller Gin constructed by Mr. Fawcett, which was found to clean the long staple Cotton satisfactorily; but was not found adapted to the short staple or Cotton of India.

The last experiment was made with a machine purporting to be a Guzerat Churka, with improvements by a person named Elliot of Manchester, and worked by two men; but this was not found to answer in any particular.

N. B. It should be remarked that all the Cotton used on this occasion had been at least seven years in England.

It was intended that further experiments should be made with American Cotton, &c. but those above described occupied the entire day.

CAPT. BAYLES, H. E. I. C. S., *Adelphi Hotel.*

DEAR SIR,—Herewith we send you three hanks Twist, spun from your own* Cotton, viz.

One Hank	No.	12	Throstle Twist.
One Hank	,,	16	Mule Twist.
One Hank	,,	32	Mule Twist.

Our object is to shew you what quality of Twist your Cotton produces on coarse as well as fine numbers. No. 12 Throstle Twist and No. 16 Mule Twist, we consider to be very good, and the No. 32s Mule Twist very fair yarn, considering the quality of Cotton.

The Cotton (yours ginned) when compared with Surats of an ordinary quality, is about ¾ to 1*d* per lb. better, owing to its being much cleaner and free from seeds; it cards free and, in general, works well, the Cotton is obviously cut and nipt in the ginning to a small extent, which, if obviated, would be a great improvement. We rate it equal to fair Orleans *or prime Surats. If such Cottons could be produced* so cleaned, a very great preference would be given it to ordinary East India and Surats, which is commonly full of sand, seeds, and shale: it would also be preferred to low Americans for its very bright color.

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* *This was common Surat Cotton with the seeds in it as* originally gathered and quite uncleaned. It had been lying in our warehouse for some years.—W. B. B.

We value this ginned Cotton with 5*d* Bow'ds or Orleans, and 1*d*. per lb. better than 4*d*. Surats.

We are, Sir,

Your very obdt. Servants,

THE NORTH SHORE MILLS COMPANY.

Liverpool, 22nd July, 1840.

We consider this Cotton to lose less weight in spinning than common East India Surats.

ART. XXXII.—*On the Potatoe and its Culture in India. By Mr. G. T. F. Speed.*

[Read at the Meeting of the Society of Nov. 11th, 1840.]

But a few years since this most useful esculent was only grown by a few for the supply of the European residents alone; its good qualities have, however, now become known to most natives, and there are consequently few Bazars in the country where the Potatoe is not to be found; this is especially the case in Behar and the western provinces, where they may be met with as large and as good-flavored as the ordinary run in Great Britain, and where they also form a common article of diet among the Natives of all classes and castes. Nevertheless much remains to be done with respect to the culture of this article; no attention appears to have been yet paid to the character or sort cultivated, whether as regards quality or productiveness; *nor do we find even, that* any inquiry has been made as to the most fitting soil to be found in India for its culture.

We are told, it is true, that Tirhoot, Arrah and the neighbourhood of Hooghly, yield, it is supposed, the largest proportion of Potatoes, but as yet there does not appear to have been any attempt made at accounting for this greater production, nor do we find it anywhere accurately on record what the amount of produce has been from any given portion of land, and we are consequently in ignorance of its value as a crop.

The only account published that attempts such an estimate, appears in Mr. DaCosta's translation of the Dewan Pusund. By this the ground requires seven or eight ploughings in its preparations, besides four or five harrowings, the seed required is three seers to the beegah; the subsequent culture being four hoeings and twelve to fourteen times irrigating. It is to be remembered that this calculation applies only to the upper provinces, where the soil requires more ploughing and watering than in Bengal, a fair average account therefore will stand thus for one beegah:

Rent one half, as other crops will occupy the lands during the remainder of the year, ...	2	0	0
Five ploughings, ...	1	4	0
Harrowing,........................	0	6	0
Three men planting, ...	0	6	0
Cost of three seers of seed, ...	0	9	0
Hoeing twice,........	1	8	0
Watering four times,...............	1	8	0
Expenses, ...	7	9	0

The produce of this, on the authority of the before-mentioned work, would be from seven to ten maunds, in the latter case giving, at one rupee twelve annas per maund, about Rs. 17-8-0, the number of pounds being about eight hundred and twenty. But this is a very doubtful authority, and can hardly be taken as a datum for calculation, which has yet to be found. In the absence of such information we can only refer to results in England. Some fifty years ago 400 bushels were considered an extraordinarily good return from an acre, equalling about 21,400 pounds. But the Encyclopædia of Agriculture published in 1831 by Loudon, calculates the produce per acre at from five to eight tons, and adds that "the greatest produce is from the Yam, which has been known to produce twelve tons or 480 bushels per acre," the average of the former return being equal to 14,560 lbs., and the amount of the latter 26,550 lbs.

Mr. Robertson of Kilkenny in an article that appeared in the Gardener's Magazine, of October, 1838, states his improved culture to have raised the produce to 200 barrels of 20 stone each or about 32,000 lbs. per acre. Speaking of various experiments on varieties of the Potatoe, another writer in the same periodical states (March, 1836,) that in the previous year he had obtained from the agricultural sort 572 bushels (38,324 lbs.): the bread-fruit Potatoe 689 bushels (46,163 lbs.) and the poor man's profit 636 bushels (42,612 lbs.) each per acre.

This last is described as "a round purple and white Potatoe, very good for the table," hardy and easy of culture, very similar apparently to the description ordinarily met with in India. Another author pronounces that "the produce of the Potatoe varies so greatly that it is difficult to say what may be regarded as a medium return. Generally speaking, the crops produced in England and Ireland are greater than those produced in Scotland. In Lancashire the produce is reckoned to be from eight to twelve tons per acre. In Scotland a fair produce is held to be eight tons per Scotch acre, which is equal to 6⅖ tons (14,336 pounds) per English acre.—*David Low's Elements of Practical Agriculture.*

But the most extraordinary improvement on record appears in the experiments made by the late lamented Mr. T. A. Knight, published in the Transactions of the Horticultural Society of London, and these are the more deserving of attention because they shew a regular progressive improvement. It is not, however, necessary here to trace the early steps of improvement, the object being only to shew what may be done with this valuable root, and this notice is therefore confined to his paper appearing in the 5th part of the 1st Vol. second series of the Transactions. In this Mr. Knight says he found some difficulty in obtaining credit for the accuracy "of his statement," that one acre had yielded 670 bushels of 80 lbs. each, or 53,600 lbs., and he therefore invited several farmers and gardeners to witness the digging of his crop in 1832 when the internal plantation, after removing the outside rows and end plants yielded 964 bushels and 43 lbs. or some 77,163 lbs. per acre: this were scarcely credible except on such undoubted authority, but being so proved it may serve as a text for improvement wherever it is mentioned, and they are facts well deserving of being related wherever the root itself may make its way.

Our own Transactions contain a paper by Mr. J. W. Masters, in which he brings to notice that "so far as his experience goes, a Potatoe of a moderate size, having three or four good eyes, is far better than a part of a large one and generally produces a better crop;" and this is fully borne out by the result of the experiments in England that I have just referred to. Mr. Knight having found that planting whole tubers at a greater distance than had usually been adopted would afford a larger proportionate produce than could be obtained from the old method of planting only sections, on which subject also Doyle in his work on practical husbandry observes, "we planted cut sets of apparent excellence in some drills; and being hard run for seed, we used for some contiguous drills (of precisely similar soil, and with dung from the same heap,) the refuse of our Potatoes, not larger than walnuts. These have grown *luxuriantly* and without a single failure; while the cut seed failed altogether in numerous instances, and in no case pushed forth such vigorous stems as those which proceeded from the whole potatoes."

This is conclusive as to the advantages to be obtained by this manner of planting, and it is really surprising that any one should continue the old method; yet such is the case, and it is the general course pursued in India.

Dr. Patrick Neill, in a recent work published in Edinburgh, brings to notice another circumstance with respect to planting this root which deserves to be more fully known: it is that "an important fact in the cultivation of the potatoe was observed about the year 1806 by the late Mr. Thomas Dickson of Edinburgh, viz. that the most healthy and productive plants were to be obtained, by employing, as seed stock, unripe tubers, or even by planting only the wet or least ripened ends of long-shaped Potatoes; and he proposed this as a preventive of the well known disease called the *curl*. This view has been confirmed by Mr. Knight."

Thus much for the sets to be used in planting. The next consideration is the soil, of which the best is that fresh, light, unmixed loam so frequently met with here; in this the Potatoe thrives without any manure, and its produce will always be the best flavoured. With a wet soil the tubers became sickly and watery, besides being more subject to the attacks of worms, centipedes, &c. Fresh unrotted manure is apt to give a disagreeable flavour to the root, but the soil that is tempered with old mellow dung, well rotted leaves or vegetable mould, will next to fresh loam give the most esteemed Potatoe.

For after culture, as soon as the plants appear a deep hoeing should be given, and when they reach four inches in height the earth must be brought up around them to strengthen their growth and promote the increase of root fibres, this operation being repeated until the original set is at least fifteen inches below the top of the ridge: too much hoeing cannot be given, and when the blossoms appear pinching them off will increase the crop; indeed Mr. Knight estimates the value of this operation, trifling as it appears, at above a ton per acre.

The main crop should not be taken up until the haulm has dried, but it too often happens in this country that this rule is not attended to, and the crop is therefore dug before it has attained maturity.

From the foregoing observations it will appear that a crop of even 200 bushels to the acre would give a return of above fifty-four maunds per beegah, which taken in the average at not more than twelve annas the maund, would yield some forty rupees; but, that the improvement effected by Mr. Knight would bring this return up to three hundred and fourteen maunds, yielding at least two hundred and thirty rupees per beegah.

This may appear a long communication on such an apparently trifling subject as a Potatoe, and some might doubtless be found more amusing, and even in the opinions of many more useful; but if by means of this notice of a valuable and generally useful root, any one can be induced to pay attention to its growth and teach the ryots its value, so that where they have hitherto grown ten or twenty maunds they may now grow fifty and eventually three hundred or even half that quantity, a good object is undoubtedly effected; and not only will the Potatoe be brought more generally into use, and hence made cheaper, but the small sized tubers hitherto used by the poor may be turned to their proper use of feeding cattle, and hence the whole system of agriculture become benefited by what seems, in its present form, a mere trifle—the growth of a Potatoe.

ART. XXXIII.—*Note on the benefit to be derived by establishing Experimental Farms for the introduction of new, and improvement of known products, in various parts of India. By G. H. Smith, Esq. Collector of Customs at Delhi.*

[Read at the Meeting of the Society on the 9th Dec. 1840.]

1. It would almost be a waste of time endeavouring to shew the great advantages which would result from the introduction into this country of new and valuable products, or the adoption of improved methods of cultivation and treatment of those which are already known. The want of suitable exports, as a return for the extensive imports from England, has been long felt, and the attention of the Home and Indian Governments, for some time past been directed to the subject. It is my intention in this paper to point out what has occurred to me as the most advantageous way of directing such means, as the liberality of an enlightened Government is prepared to devote to the improvement of agricultural staples, from which alone can we hope to increase our exports to the extent necessary to meet the cost of the manufactures from England which are poured into the Indian market.

2. That much has already been effected by the labours of the Agricultural Society, aided by the munificent grants of money which have from time to time been placed at its disposal by Government, no one can doubt; that important benefits to this country have also resulted from the skill, energy, and capital of European settlers, the large exports of Indigo and other products raised by them sufficiently testify; and

that individuals amongst the services have not been wanting in their efforts to aid the good cause, is apparent from the perusal of the Transactions of the Agricultural Society for past years; at the same time it will be admitted, that there has been a want of system, combination and unity of purpose, necessarily attendant on the efforts of individuals acting without concert, not only as regards perfecting the growth and subsequent treatment of those products, which have been deemed worthy of attention, but also in recording and making public the result of the labors of each individual in prosecution of the particular inquiry in which he has been engaged. With so extensive a field for operations, how little has been effected.

3. In proof of this let any one refer to the numerous communications published by the Agricultural Society, recording the results of experiments in Cotton, Sugar, or any other produce, and he will not be able, from a score of communications, to glean sufficiently accurate data to enable him, with any confidence, to enter on an extended cultivation of any one of the products in question.

4. In nine cases out of ten, he will either find the quantity cultivated too small to afford any criterion as to the success or otherwise that is likely to attend on a speculation carried on on a large scale, or some specification of the mode and cost of cultivation, size of the beegah (which varies all over India) wanting, to enable him to complete his calculations on the subject.

5. Should he be so fortunate as to meet with a single communication embracing all the necessary particulars, the chances are, that the scene of operation

where the experiment was carried on is situated in another part of the country, and consequently the difference in the soil, climate, price of labor, &c. is such as to render his having recourse to the same mode of cultivation, or basing his calculations of expense and produce on the data thus furnished, out of the question. Besides it is not to be expected that persons, who are dependant on their own exertions for a livelihood, will make known to the public, and thereby create competition, the result of any experiments which they have been engaged in, and which may have proved successful, and giving, or likely to give, a good return.

6. There are also but few people in India who have the means or hardihood to engage in agricultural experiments on a sufficiently extended scale, to admit of an accurate conclusion being deduced from results; and of this number there are very few, if successful, who would be sufficiently public-spirited to make known the results to the world.

7. Nothing is more likely to mislead, especially in agriculture, than an experiment on a small scale; hence nearly the whole of the experiments recorded in the Transactions of the Society, satisfactory though some of them may have been, as establishing the fact, that certain products can be grown in certain situations, are still inconclusive; having either been conducted on too small a scale, or from sufficient details not having been furnished as regards the nature and cost of cultivation, &c.

8. I have for some years carefully watched the progress of experiments, which have been made by various individuals in these Provinces. With the

exception of one made by Colonel Skinner, at Hansie, on a rather large scale, in Upland Georgian Cotton, I have not witnessed or even heard of a single experiment being conducted on principles likely to lead to any satisfactory result; nor do I consider it at all probable that any really satisfactory results can be anticipated, except after such an outlay of funds, and such a sacrifice of the money embarked, as places it out of the power of an individual, of limited means, prudently to engage in the undertaking.

9. The only persons who are at all likely to make these experiments are Europeans, and they, with the exception of such a person as Colonel Skinner, to whom expense is no object, will never carry on their operations on a sufficiently large scale to serve as a just criterion of success.

10. I am satisfied that no neez cultivation conducted by an European, except, perhaps, what is connected with expensive machinery such as the cultivation of Sugar-cane, will give a profitable return, as paid labourers will never perform half the work, under any system of supervision, that is got through by a man working for his own immediate benefit; and no Native can be induced to grow new, or modify his style of cultivation and treatment of old products, until he is satisfied beyond all doubt, from witnessing the success of others, that benefit will be derived from the change. No better proof of this can be adduced than the number of years which passed before Natives entered on the manufacture of Indigo, which they only did on witnessing the profits derived from that source by Europeans.

11. There being no immediate prospect therefore of experiments in new products, in which I would class Foreign Cottons, Hemp, &c. being carried on, either by the members of the Society, or individuals unconnected with it, on a sufficiently extended scale, it becomes a question whether efforts should not be made by the Society to induce the Government to aid in the prosecution of such measures as may seem best adapted to develope by accurate experiments, not only what new products can be introduced with advantage, but also what known ones are susceptible of improvement. Entertaining as I do a confident belief that the agricultural status of India is capable of great improvement, that many new products may be introduced, and many known ones improved by judicious measures, I feel particularly anxious that the Society should, if convinced of the soundness of my views, take steps to induce Government to apply some portion of its resources towards achieving this most desirable object. Without this assistance I despair, for reasons which I have already assigned, seeing any considerable advance being made.

12. The doctrine, that a Government should not interfere in directing the skill and capital of its subjects, is sufficiently sound as applied to a country so far advanced in civilization as Europe, where the attention of thousands is unceasingly directed to the discovery of some new channel for the profitable employment of capital. As regards India, however, where there is not only a great want of capital and intelligence, but also a noted prejudice inherent in the Native character, against all change or innovation, the

application of this doctrine is not only objectionable but mischievous.

13. The plan which I am anxious to see adopted, and which I am convinced would be attended with the most beneficial results, is the establishment of experimental farms by Government in different parts of India.

14. The object which I propose should be attained by these farms, would be, to ascertain in the first place by a series of experiments on a sufficiently extended scale, what new products could be introduced, and what known ones could be improved in that part of the country where the farm was established. Secondly, to furnish data, which could be entirely depended upon, as regards the products cultivated; and thirdly, to disseminate throughout that part of the country, the seed of such products the cultivation of which it was proved could be attended with advantage.

15. In order that the whole country should benefit by this plan, it would be obviously desirable that experimental farms should be established in various parts of India, for the difference of climate and soil is so great that a product which gave the best return in Bengal, might, and probably would, fail entirely if cultivated on the same plan in the Upper Provinces. Indeed it is more than probable that were experimental farms established in the Upper and Lower Provinces, the objects to which the conductors would eventually have to devote their attention, would be entirely different. Thus for example, in Bengal it might be found expedient to restrict their experiments to Hemp, Flax, Peruvian and Sea Island Cotton; whereas in the

Upper Provinces, superior descriptions of Cereal Grains, Sugar-cane, Egyptian and Upland Georgian Cottons, might prove the most attractive subjects for experiment.

16. It may be objected, that there would be a difficulty in securing a proper supervision for experimental farms even if established, and that without efficient supervision, no reliance could be placed on information derived from the subordinates employed. Happily, however, this objection, however cogent it might have been some years ago, can now be met with the fact, that the Society have subscribers scattered all over India, many of whom would with pleasure devote a portion of their leisure time to the superintendance of an undertaking of this kind, which, they could not but feel assured, was alone calculated to secure the object in which they were so much interested.

17. At all events the thing is worth a trial, especially when it is considered that the object in view, even if partially attained, will be attended with incalculable benefit to the country.

18. Supposing that by experiments conducted on a scale of sufficient magnitude, the fact is established, that either Cotton of a superior kind, or Hemp, can be grown in this country to great advantage, who can calculate the enormous benefit that will be derived by the country, at present drained of its circulating medium consequent on the want of produce adapted to the wants of the European market.

19. The establishment of experimental farms would no doubt be attended with considerable expense, and could not be expected to yield, at all events for some years, a return any thing equal to the outlay.

20. It would perhaps be premature, until the expediency of establishing them was admitted, entering on any detailed estimate of their probable cost, or more than touching on the objects to be attained by them.

21. The first expense attending on the establishment of a farm equal to the purpose required of it, would probably, in the purchase of stock, erection of buildings, &c., amount to ten thousand rupees, and the monthly expenses would scarcely fall short of one thousand rupees.

22. To this would be added the wages and expenditure of such individuals as might be attached to it for the prosecution of distinct experiments; for instance of the growers and preparers of Cotton and Hemp, who might with great advantage carry on their labours at these farms.

23. After the first year it might reasonably be expected that the returns from the farm would cover one-half the out-goings, but even this could not be entirely depended upon.

24. I would propose that from one thousand pucka beegas to one thousand statute acres of land should be attached to each farm in those districts where Cotton would form one of the principal subjects of experiment.

25. This quantity of land would give full employment to one hundred families, having a catcha (two bullock) plough attached to each. The wages of one hundred cultivators (and their wives and children at such seasons as they were required for weeding or picking Cotton) would probably average about five

rupees each family, and consequently aggregate 500 rupees a month. 300 rupees a month would secure the services of an efficient Native or European superintendant, and 200 rupees a month cover such additional establishment as might be necessary, and all contingencies, including land and water rent, should the lands be so situated as to render it liable to the payment of one or both of these imposts. One hundred pairs of bullocks would cost about 3,000 rupees; farming utensils say 1000 rupees; seed 1000; farm buildings, huts for labourers, the digging of wells where necessary, &c. &c., would probably swell up the amount of first outlay to about 10,000 rupees.

26. The locality on which to establish these farms, if sanctioned, will form the next subject for consideration. If only one was allowed to the North Western Provinces, it would be most desirable that it should be placed in a Cotton district, as Cotton would be one of the first objects of attention. In this case I should recommend Kosil being selected. It is situated about five miles S. E. of Hodal on the Mattra road, and has a great deal of Cotton cultivated in its vicinity. There are besides some extensive buildings in the neighbourhood which, before the failure of Mercer and Co., were occupied by cotton screws. These buildings might be now secured on easy terms, and for a small sum be put into a proper state of repair.

27. For experiments in all other products, except Cotton, I would prefer the soil and climate of the Doon, which, independent of other advantages, such as facilities for irrigation, &c., is perhaps better adapted for maturing and acclimating the seed of any new

products that might be introduced, than any district in India. It is also, I believe, considered, by Professor Royle and Dr. Falconer, as peculiarly adapted to the production of Hemp, and by the latter to the growth of the Tea plant.

28. Under any circumstances, therefore, it would be desirable that a branch farm on a small scale should be established there, which might be placed under the charge of Dr. Falconer, the superintendent of the Saharunpoor Botanical Garden, or Lieut. Kirke, Adjutant of the Goorkah Battalion.

29. I will not venture to offer any suggestion regarding any Experimental Farms that may be established in Behar, or the Lower Provinces, as I doubt not, if the project is approved of, and the expenditure sanctioned by Government, the Society itself, or individuals connected with it, will be able to point out the manner in which funds, which may be granted for the purpose, might be best applied.

30. Supposing that Government sanction the formation of one Experimental Farm for these provinces, with a branch such as I have described in the Dehra Doon, I would propose that the operations of the former should be principally directed to the cultivation of Cotton, both country and foreign, and to experiments, on a smaller scale, in various descriptions of cereal grains, including American Maize, &c. To this farm I would attach one or more of the persons who have been procured from America for the purpose of making known the most approved methods of cultivating and treating foreign Cottons.

31. In the Doon farm efforts should be made to

e Hemp, Flax, and Tea; and experiments on a smaller scale made with those products which would principally be cultivated at the farm in the plains; and to this branch farm should be attached one or more of the Belgian Hemp-growers, to teach the people employed in the growth, the most approved mode of cultivating and preparing this product.

32. It will be observed that I have limited my plan entirely to a Neez cultivation. I have done this under the full persuasion that it would be waste of time and labour endeavouring to make the natives of this country, who were working on their own account deviate from the system followed by their ancestors, until they were satisfied beyond a doubt that the change would be attended with advantage.

33. When once, however, the results of experiments at the farm should establish, beyond all question, the benefit to be derived from the introduction of some new product, or modification in the cultivation or subsequent treatment of an old one, then I would propose extending the sphere of action of the superintendents, by placing under their control the farm of villages in the vicinity taken on Government account, into which, as Ticcadars, they would be able to introduce improvements, which would be impracticable without their obtaining such a footing.

34. Owing to the poverty and improvidence of the people of this country, there are always villages to be had in farm in every district, and I feel confident, that villages might be taken, and any previously ascertained improvements introduced, without subjecting Government to any additional expense.

35. I have now given an outline of a plan which has occurred to me as well calculated to benefit the agricultural interests of the country, and it will rest with the Society to adopt or reject my views. The subject is one to which I have for some years past devoted considerable attention; it having, in fact, from my connection with a large farming speculation in the Doon, been made one of more than common interest. If therefore, as I would hope, they feel disposed to consider the suggestions which I have offered as worthy of notice, I trust they will be induced to urge Government to aid, with its resources, the attainment of the object in view, if not in the manner I have proposed, at least in some modified shape.

G. H. SMITH.

Delhi, 26*th Sept*. 1840.

Statement of the Average Produce and Cost of Cultivation of Indigenous Cotton in ——

1	2	3	4	5	6	7	8	9	10	11	12	13
			Average.									
Presidency.	District.	Pergunnah.	Quantity of cultivation in acres.	Produce of clean cotton per acre in lbs.	Price of do. per maund of 80. lbs.	Cost of cultivation.	Govt. Revenue according to Purgunnah rate.	Profit.	When sown.	When gathered.	Cost of carriage per hundred maunds to the nearest seaport.	Remarks.

N. B.—Each district statement to be accompanied with a muster of the indigenous Cotton of the district, weighing half a seer, or one lb.

Note.—The 7th and 9th heads of information will be obtained with difficulty, will require great attention, and can only be hoped to approximate to the truth, as it will, it is believed, be found to be regulated by the price of grain sufficient for the subsistence of the cultivator, the surplus return, after payment of the Government Revenue, being swallowed up in rent (not revenue) and profits of the Soukar, who advances funds to the Assami, and provides stock, seed, &c.

ART. XXXIV.—*A Series of Observations, on the Climate, and Horticulture of Candahar, from January to August,* 1840. *By Col. L. R. Stacy.*

[Read at the Meeting of the Society, on July 14th, 1841.]

JANUARY 1840.—Weather cold, frosts, ice, rain at intervals particularly from the 14th to the 22nd, snow on the 23rd.

A few Cabbage Sprouts early in the month—Carrots and Turnips—Cress, Spinach and Onions throughout—Narcissus.

FEB. 1. Snow and sleet, rain.
2. Fine.
3. Hail.
4 and 5. Fine.
6. Do. very cold.
7 and 8. Do. do.
9. Do., less cold.
10. Do. do.
11. Do. do. cloudy.
12. Cloudy, less cold.
13. Do., 5 P. M. rain.
14. Friday, B. Eed, still rains.

Creepers should be sown directly the frost ceases. Ditto Vegetables. Radishes, Cress, Carrots, and dried Fruits—Water Cress.

15. Clear.
16. Cloudy, rain at night.
17. Rain all day.
18. Do. at times.
19. Light clouds at times,
20. Do., more cloudy.
21. Rain in the morning.
22. Heavy rain during the night.
23. Rain in the evening and night.
24. Clearing.
25. Clear.
26. Sun very hot.
27. Still cloudy at times.
28 and 29. Clear.

Turnips, Spinach, Onions, Pumpkins, Melons, and Water ditto.

MARCH 1. Few clouds, sun very powerful.
2. Do., cloudy.
3. Cloudy with light showers.
4. Sun and clouds, rain half the night.
5. Rain.
6. Clearing up.
7. Fine, sun very hot.
8. Do. do., at sun-set few clouds.
9. Flying clouds and hot sun.
10. Do. do.
11. Sun hot, cloudless.
12. Do. do.
13. Do. do.
14. Do. do.
15. Do. do.

Young Onions and Lettuce—
Spinach, Mushrooms, Rhubarb.

16. Few clouds, drops of rain.
17. Do., light showers.
18. D., all day, do., at night.
19. Do. and rain frequently.
20. Fine, clear, and rather cold.
21. Do.
22. Do., clouds in the evening, rain.
23. Rain, do. clearing.
24. Fine day.
25. Fine day, cloudy, evening cold.
26. Cloudy, with showers, very cold.
27. Clear, cold.
28. Cloudy.
29. Clear.
30. Do., cloudy towards evening.
31. Cloudy, showers at times.

Onions

APRIL	1.	Cloudy and cold, windy.	Spinach—Water Cress.
	2.	Heavy rain during the night, still cloudy.	
	3.	Rain early, towards evening clearing.	
	4.	Fine, clear, cold day.	
	5.	Do., less cold.	
	6.	Cloudy at times.	
	7.	Cloudy.	
	8.	Rain, fierce and hot sun.	
	9.	Cloudy, light wind.	
	10.	Do. at times.	
	11.	Clear.	
	12.	Cloudy at intervals.	
	13.	Morg. fine, P. M. cloudy.	
	14.	Showers, P. M. fine.	
	15.	Cloudy at times.	
	16.	Do., warm.	Lettuce, Onions and Spinach—Fennel, Mint and Water Cress—White Mulberries.
	17.	Do. do.	
	18.	Do., close, hot.	
	19.	Do. do. do.	
	20.	Storm, very hot, close.	
	21.	Hot, not so close.	
	22.	Hot, do.	
	23.	Hot.	
	24.	Do.	
	25.	Do. cloudy at times.	
	26.	Do., storm at night.	
	27.	Less high wind.	
	28.	Do. do.	
	29.	Hot, calm.	
	30.	Do. do.	
MAY	1.	Hot, clear.	White Mulberries come in. Lettuce going out. Cucumbers come in. Early sort of Black Mulberry in small quantities.
	2.	Do., Wind.	
	3.	Do., boisterous.	
	4.	Do., calm.	
	5.	Do. do.	
	6.	Do. do.	

7. Hot, gusts of wind at times. 8. Do. high wind. 9. Do. calm. 10. Do. do. 11. Do. do. 12. Gusts of wind, cloudy at times. 13. Do. do. 14. Do. less cloudy at times, not so hot, mrngs. cold. 15. Do. of yesterday.	Apricots—Black Mulberries, early sort, in plenty.
16. Calm clear. 17. Do. 18. Do. 19. Cloudy at times. 20. Do. very hot. 21. Light passing clouds. 22. Do. with gusts of wind.	Plums, (Aloochah) watery, insipid, being an early fruit: graft on the Aloobokah in India.
23. Calm, very hot. 24. Do. 25. Do. 26. Light winds, do. 27. Do. do. 28. Gusts of wind, do. 29. Calm, hot. 30. Do. do. 31. Hotter than ever, passing clouds at intervals.	Aloobokara very good. Cherries, small, very little superior to those at Simla, and its vicinity.
JUNE 1. Very hot, gusts of wind at intervals. 2. Light airs, very hot. 3. Do. do. 4. Do. do. 5. Do. do. 6. Dead calm, do.	The fine large Black Mulberry (Shah Toot) equal to the English.

	7. Dead calm, very hot, heavy clouds on horizon. 8. Do. do. do., Ther. 87°. 9. Do. do., in house 90°. 10. Light airs, passing cloud, Ther. 88°. 11. Calm, Ther. 87°. 12. Calm, hot. 13. Do. do. 14. Do. *very* hot Ther. 90°.	Small Purple Grape selling, as acids for Meat, Apples, three kinds; Plums, two kinds; Apricots, Pontia Brassicæ; Pieris cratægi; Cynthia cardui.
	15. Light breeze, dusty in gusts. 16. Light clouds, calm. 17. Hot wind. 18. Do. 19. Do, clouds. 20. Do. do. 21. Calm, hot, Ther. 89°. 22. Do. 23. Do. 24. Do. 25. Dusty towards noon. 26. Do. do. 27. Dusty in gusts, hot. 28. Calm and clear. 29. Do. 30. Do.	Grapes of sorts; Peaches and Melons. Melons said to be a failure, filled with insects. Purple Plums. The Apples are not good.
JULY	1. Do. 2. Do. 3. Clouds on horizon to South East. 4. Do. rising, calm. 5. Do. passing. 6. Do. horizon all round. 7. Calm, close and piping hot. 8. Calm. 9. Do. Ther. 93° in shade to South.	Large round Grapes. Long Drop Grapes. English Plums. Purple Plums. Yellow ditto. Nutarimes Figs.
	10 to 13. Do. do.	Olecole.

14.	Light clouds occasionally	Fruits poor. Grapes black, red, and white insipid. Melons ditto. Water do. so so. Yellow Plums, sour, unripe. Peaches and Mulberries capital. Bangans, Pumpkins, Cucumbers, Torie, Onions, Capsicums, Orlean Plums ripe.
15.	Hot, Ther. 19°.	
16.	Do. do. 93°.	
17.	Do. do.	
18.	Do. do.	
19.	Do. do.	
20.	Cloudless, hot.	
21.	Do. do.	
22.	Do. do.	
23.	Do. do.	
24.	Do. do.	
25.	Do., clear.	The Grapes improve. Orleans Plum disappeared. Pears. Melons not in perfection. Peaches and Nectarines disappear. Vegetables of sorts are plenty. The weather oppressively hot.
26.	Do. do.	
27.	Do. do.	
28.	Do. do.	
29.	Do. do.	
30.	Do. do.	
31.	Do. do.	
Aug. 1.	Do. do.	
2.	Do. do.	
3.	Do. do.	
4.	Do. do.	
5.	Do. do.	
6.	Do. do.	
7.	Do. do.	
8.	Do. do.	
9.	Very hot, the heat seems to encrease as the moon gets to the full.	The Water-melons are excellent, the Melons Sindah better than they were but still wanting in flavour. Kinboosah excellent.
10.		
11.		
12.		
13.		
14.		
15.		

Note.—The end of July and beginning of August like a second spring,—sound Cauliflowers, Ole Cole, and Cabbage first week in August,—the 15 first days of August hotter (more oppressive) than any part of the year.

PROCEEDINGS

OF

THE AGRICULTURAL AND HORTICULTURAL SOCIETY OF INDIA.

JANUARY 8, 1840.—ANNIVERSARY MEETING.

The Honorable Sir Edward Ryan, President, in the Chair.

(Twenty-two Members and a Visitor present.)

The gentlemen proposed at the December Meeting were duly elected Members of the Society, viz.

Major Thos. Robinson, Dr. J. M. Brander, Messrs. Henry Armstrong, J. S. Mendes, Henry Hill, James Macansh, Arch. Drummond, and James Savi.

The names of the following gentlemen were read as candidates for election:

B. R. Muirhead, Esq. (of Sesonee Factory viâ Monghyr,)—proposed by Mr. W. F. Gibbon, seconded by the Secretary.

Captain De Bude, (Offg. Secy. Military Board,)—proposed by Dr. Spry, seconded by Mr. F. C. Smith.

C. T. Sealy, Esq. (Civil Service,)—proposed by Mr. T. P. Biscoe, seconded by Mr. F. C. Smith.

Wm. Stuart Alexander, Esq. (Civil Service,)—proposed by Mr. Nathl. Alexander, seconded by Dr. Spry.

Captain Mathew Smith, (Prinl. Asst. A. G. G., Saugor and Nerbudda Territories,)—proposed by Dr. Spry, seconded by Dr. Strong.

H. R. Leyburn, Esq. (of Nunnoa Factory, Shahabad,)—proposed by Dr. Spry, seconded by Mr. C. Trebeck.

J. O. Beckett, Esq. (Shahjehanpore,)—proposed by Mr. Chas. Lyall, seconded by Dr. Spry.

J. A. Deverell, Esq. (of Cootooreah Factory viâ Merai,)—proposed by Mr. W. G. Rose, seconded by Mr. J. A. Gregg.

T. C. Morton, Esq. (Barrister,)—proposed by Sir Edward Ryan, seconded by Mr. G. W. Johnson.

George Lindsay, Esq. (Civil Service, Benares,)—proposed by Major Carter, seconded by the Secretary.

George Vint, Esq. (Calcutta,)—proposed by Mr. David Hare, seconded by Mr. A. C. Dunlop.

Robert Macnair, Esq (of Joradah Factory, Jessore,)—proposed by Mr. David Hare, seconded by Mr. A. C. Dunlop.

E. G. Dubus, Esq. (of Nohutta Factory, Jessore,)—proposed by Mr. David Hare, seconded by Mr. A. C. Dunlop.

E. Dubus, Esq. Junior, (of Nohutta Factory, Jessore,)—proposed by Mr. David Hare, seconded by Mr. A. C. Dunlop.

P. Burnett, Esq. (of Nohutta Factory, Jessore,)—proposed by Mr. David Hare, seconded by Mr. A. C. Dunlop.

D. Lethangie, Esq. (of Gudgut Factory, Jessore,)—proposed by Mr. David Hare, seconded by Mr. A. C. Dunlop.

The Meeting on assembling proceeded to the nomination of Office-bearers for the ensuing year: on the scrutiny being declared the following gentlemen were found duly elected.

President.—The Hon'ble Sir Edward Ryan.

Vice-Presidents.—N. Wallich, Esq. M. D.;—C. K. Robison, Esq.;—His Highness Nawaub Tahower Jung; Raja Radhakant Deb.

Secretary.—Henry H. Spry, Esq. M. D.

Assistant Secretary and Collector.—Mr. A. H. Blechynden.

The following is a list of Standing Committees for the year 1840:

Sugar.

Messrs. N. Alexander, W. F. Fergusson, Dwarkanauth Tagore, D. Hare, A. Muller, G. U. Adam, J. Allan, and Dr. H. H. Spry.*

Cotton.

Messrs. Jos. Willis, Chas. Huffnagle, D. B. Syers, W. Earle, and G. U. Adam.

Silk, Hemp, and Flax.

Dr. O'Shaughnessy, Messrs. R. Watson, C. K. Robison, Ramcomul Sen, J. Willis, D. W. H. Speed, and G. T. F. Speed.

Coffee and Tobacco.

Drs. Strong and Wallich, Messrs. Thos. Leach, D. W. H. Speed, and D. Hare.

Implements of Husbandry and Machinery.

Col. D. McLeod, Capt. W. N Forbes, Messrs. Ramcomul Sen, C. K. Robison, Raja Radhakant Deb, Chas. Huffnagle, and D. Hare.

Caoutchouc and Oil Seeds.

Drs. Wallich and O'Shaughnessy, Messrs. Ramcomul Sen, Raja Radhakant Deb, and Dr. Corbyn.

Improvement of Cattle.

Messrs. N. Alexander, C. K. Robison, Dr. Wallich, Messrs. Chas. Huffnagle, W. P. Grant, C. R. Prinsep, W. F. Gibbon, and A. Harris.

Committee of Papers.

Dr. Wallich, Messrs. M. A. Bignell, and G. W. Johnson.

Agricultural and Nursery Committee.

Dr. Wallich, Messrs. Chas. Huffnagle, W. F. Gibbon, and Thos. Leach.

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* Ex-officio Member of each Standing Committee.

General Committee.

Dr. Strong, Messrs. Jos. Willis, D. Hare, and Radamadub Banoorjee.

Finance Committee.

Messrs. W. F. Gibbon, M. S. Staunton, D. W. H. Speed, and Chas. Huffnagle.

MUSEUM AND NURSERY.

1. A supply of thirty-two seers of Mauritius Maize grown at Chittagong. This Maize is very fine, and is under distribution.—*Presented by Charles Bury, Esq.*

2. The Model of a Sugar-cane Mill in common use in the Cuttack Province. Mr. Cumberland, Civil Surgeon at Pooree, who favors the Society with this Model, states that he has not met with anything like it out of the Province, and that from its cheapness, simplicity of construction and perfect adaptation to the complete expression of the Cane juice, it appears to him to be worthy of general use in the country. The whole cost of the Machine is only three rupees. It is made entirely of wood without a particle of iron.—*Presented by Mr. Cumberland.*

In allusion to the above Mill the Hon'ble the President took occasion to draw the attention of the Meeting to a facsimile sketch of it which has been published by Dr. Spry in his work "Modern India," wherein particular notice is paid to this most efficacious Machine for the above very desirable qualities.

3. Five samples of Flax grown in the district of Shahabad, Province of Behar, illustrating the fact of the Indian soil being capable of producing Flax of equally as good a staple as that from other countries.

Also a sample of Flemish, Archangel, Riga and Petersburgh Flax for the purpose of comparison. Likewise a Machine obtained from England from Mr. Loudon for the purpose of scutching the stalk.—*Presented by George Leyburn, Esq.*

4. A sample of Flax made on the Neilgherry, and a sample of Hemp (Cannabis sativa) obtained from the same quarter.—*Presented by Dr. Wallich on the part of the Hon'ble J. Sullivan.*

These two specimens came very opportunely to be placed in comparison with the specimens of Behar Flax above noticed, and the whole was ordered to be made over to the Flax Committee for inspection and report.

5. A small sample of a climbing plant, the provincial name of which is "Konga." The beauty and strength of the fibre of this plant is very apparent, and as the tree is very abundant in Chota Nagpore, Captain Hannyngton, who presents it, thinks that there can hardly be a doubt that it might become useful. The bark is readily separated from the fibre by lightly beating it, and the fibre might be had of any desired length from feet to yards, clean and unbroken. The only use made of it by the people of the country is for the purpose of stringing beads. Also referred to the Flax Committee.—*Presented by Captain Hannyngton.*

6. A sample of Coffee and Arrow Root grown and prepared in his garden at Ballygunge.—*Presented by G. F. McClintock, Esq.*

7. A basket of very fine Oranges grown in his garden at Berhampore.—*Presented by Cowar Krishnat Roy Bahadoor.*

8. A portion of a consignment of sixty-four kinds of Flower seeds, weighing 144 lbs. grown in the valley of Deyrah, by Lieutenant Kirke. Also a portion of a large consignment of vegetable seeds despatched from the Deyrah Dhoon, by Lieut. Kirke, on the 2nd August and the early part of September, to the care of Dr. Wallich.

In explanation of the reason why the above valuable consignment of seeds has been so long in reaching the Society, the Secretary mentioned that the boxes containing them had been sent to Dr. Wallich, Superintendent of the Botanic

Garden, who had accidentally omitted to transmit them to the Society. Lieutenant Kirke has a further large supply under despatch.

9. A beautiful specimen of the gum of the Pūlas, (Butea Frondosa.)—*Presented by Mr. W. G. Rose.*

10. A glazed box of fruit trees, about twenty in number, indigenous to the Eastern Archipelago, brought to Calcutta by General Biggs, from Singapore, and presented to the Society by that gentleman on the part of the Rev. Mr. White.

The above most valuable consignment is in excellent order, and was ordered to be transferred to the Nursery.

11. A fruit of the Strychnos Spinosa, native of Madagascar, from Port Natal. This fruit, which is a great curiosity, as belonging to a family of poisons, has been brought to India by Major Cox, who obtained it from Baron Ludwig, who informed Major Cox, that it is edible when the fruit is ripe, and that he (the Baron) has himself tasted it.—*Presented by Dr. Wallich on the part of Major Cox.*

Major Cox, in his note transmitting the above fruit, mentions having succeeded in bringing alive with him Sparmannia Africana, Spiræa Cratægifolia, and Microloma Lineare, which he believes have not yet been introduced into Bengal.

12. A valuable supply of seeds of various kinds, procured from the vicinity of the Hill Station of Darjeling.—*Presented by Lieut. Col. Lloyd.*

13. The model of a Flax Mill of his own invention, (a description of which appeared in the *Bengal Hurkaru* of the 5th November, 1839.)—*Exhibited by Mr. Preston.*

AGRICULTURAL STATISTICS OF THE EMPIRE.

The Hon'ble the President announced to the Meeting that he held in his hand a large number of returns from the Medical Officers of the Service, throughout the Provinces, in reply to the circular which had been addressed to them in the early part of the year on behalf of the Government of India, soliciting their aid in procuring for the Court of Directors, and the Royal Asiatic Society of Great Britain and Ireland, statistical information on the chief products of each Province at the chief mart and obscure village conjointly. The mass of information which these reports embodied, were of a most interesting and valuable nature, and in order to arrange them geographically with respect to the course of trade, they were made over to the Committee specially appointed for the preparation of these Statistics*.

COMMUNICATION FROM THE GOVERNMENT OF BENGAL ON THE SUBJECT OF A NEW SPECIES OF MULBERRY FOR THE SUPPORT OF SILK-WORMS. BY COLONEL SYKES, F. R. S., F. Z. S., ETC. ETC.

The subject which next engaged the attention of the Meeting was a letter from the Government of Bengal, giving cover to one from Colonel Sykes, addressed to the Hon'ble the Court of Directors of the India Company, on the propagation of silk-worms on a new species of Mulberry, (Morus Multicaulis.)

To Dr. H. H. Spry,

Secretary to the Agricultural and Horticultural Society.

Revenue. Sir,—I am directed by His Honor the Deputy Governor of Bengal to request that you will lay the accompanying copy of a letter from Lieut. Colonel Sykes before the Society, with an intimation that when the work alluded to in England, His Honor will have such copy at its disposal.

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* For Report of the Committee, see Article XIX. at page 146.

I am, Sir,
Your most obedient Servant,
Fred. Jas. Halliday,
Secy. to the Govt. of Bengal.

Fort William, the 12th December, 1839.

47, *Albion Street, Hyde Park, 15th July,* 1839

James Cosmo Melville, Esquire, *Secretary.*

Sir,—On Friday last a book was put into my hands by a friend, printed at Philadelphia, with the date 20th April 1839, and bearing the following title·

"The Silk Culturist's Manual, or a popular treatise on the planting and cultivation of mulberry trees, the rearing and propagation of silk-worms, and the preparation of the raw material for exportation, addressed to the farmers and planters of the *United States.* By John D'Homergue, published and for sale by Hogan and Thompson, at 30, North Fourth Street, Philadelphia."

I take the liberty to bring this book to the notice of the Chairs, and the Court of Directors, not only on account of the author's stating that almost a mania prevails at present in America with respect to silk, in the expectation of producing a better and cheaper kind, than either *India* or China affords, (and in which statement the author is borne out by an American gentleman with whom I conversed previously to seeing his book,) but because he brings to notice the very important fact of the recent introduction and rapid extension of the cultivation in Europe and America of a *new species* of mulberry, the consumption of the leaves of which by the silk-worms, materially improves the quality of the silk they spin, and the shrub is otherwise highly valuable for its hardiness and the facility with which it is propagated.

This species of mulberry brought from China and the Philippine Islands is unknown in India, according to the enumeration of Doctors Wallich and Lush, in their official reports, those gentlemen only mentioning the Morus Atropurpurea of Roxburgh in private gardens in Bengal as coming from China and Cochin-China. As the interests of the silk producers in India are likely to be affected by the new competition from America (setting aside the political question of *enhancing* the *already* serious dependency of the manufacturing industry of England upon America for raw material), it may be thought advisable by the Hon'ble Court to take measures for the immediate introduction into India, of the mulberry of which the following accounts are given in Mr. D'Homergue's book.

"The mulberry of the Philippine Islands (Morus Multicaulis) thus called by Monsieur Perottet, and often confounded by amateurs in general with the ordinary mulberry of China (Morus Alba Sinensis), which though resembling it a little in exterior appearance, differs materially from it in essential qualities.

"This is a *new* and most valuable species of mulberry, which has been of late the object of very great observation and experiment among cultivators in Europe, as well as in the United States. It is represented as possessing such decided superiority over all others, as to be speedily substituted for them in every part of the globe.

"The tree was brought from Manilla, the capital of the Philippine Islands, to France in 1820, by Mr. Samuel Perottet, a celebrated naturalist employed by the French Government. The Chinese inhabitants assured him that to this tree the disciples of Confucius are indebted for the prosperity and solidity of their empire, and that it is the only species used by them in the production of the finest silk, such as they weave into stuffs exclusively for their own use.

"The Morus Multicaulis is already propagating in many parts of Europe and the United States, and probably will be substituted for, and preferred to, all other varieties. It is generally known in Europe by a name derived from its origin, that is, the mulberry of the Philippine Islands. In botanical language Mr. Perottet has called it Morus Multicaulis, on account of its roots having the property of *putting forth many branches*. Another eminent agriculturist (Mathew Bonafons) has thought it a better designation to call it Morus Cucullata, because the leaves have a concave form, inasmuch as the botanic description marks it by the following characteristics:—Morus foliis cordatis, basi inequalibus; vix lobatis, dentatis, amplissimis, cucullatis, (mulberry with leaves heart-shaped, unequal at the base, scarcely divided into lobes, indented, very large, and concave.) Among the other qualities of this tree it is affirmed that a less quantity of its foliage is required for the precious insect, than of other species.

The lower branches of the Morus Multicaulis are ordinarily straight and small, so that they bend easily under the weight of the leaves, in the manner of a weeping-willow, but those which grow from the crown of the roots attain often a height of six feet perpendicular. The fruit, which was unknown in Europe until 1830, consists of a small number of black pulpy grains, of which only a few arrive at maturity. It is said that those grains, used as seed, seldom give a tree resembling the one upon which they grow. To obtain one precisely similar it is usual to resort either to inoculation or to cuttings; this last method is the best for the rapid propagation of this tree, because the cuttings take root in a very short time and grow quickly. This species having its origin in the most northern part of the Phillippine Islands, where the climate is much cooler than further south, it would seem easy to naturalize it in all those countries where the *White Mulberry* is cultivated.

In fact the experiment has already justified the hope. In the dreadful winter of 1829-30, in the coldest districts of Italy where this mulberry had been introduced, only the smaller extremities of the limbs perished. It also withstood the hard winter of 1828, in the field of Mr. A. Eyries, at Havre. We are also informed that it has resisted the rigor of several winters, uninjured and unprotected, on the plantation of Madame Permantier of Brooklyn, L. I. Prussia, Bavaria and Sweden, are in possession of this very useful tree, and we are informed that it grows in those countries perfectly well. The experiments made in France by Messrs. Audibert of Tarason, Barthere of Toulouse and Deslong Champs of Paris, and those made by Messrs. Bonafons and others in Italy, on this interesting question, *have confirmed* all that has been previously asserted respecting the quality of silk produced by the plant. They have further proved that the cocoons made by the worms, fed with this quality of leaves are *heavier* and produce silks *comparatively finer, more elastic and in greater quantity* than those fed with the leaf of the common tree. it has been ascertained—

1st.—"That the Morus Multicaulis does not require any particular soil as exclusively suited to its growth, but prospers even in a wet soil, which it seems to prefer.

2nd.—"That it yields very little fruit, so that the leaves are more easily cleaned, and less matter of a fermenting nature is introduced into the body of the silk-worm.

3rd.—"That it does not rise too high, and yields a greater quantity of leaves, which can be easily gathered by women and children.

4th.—"That it puts forth its thin, tender and soft leaves earlier than other mulberries, which permits the period of hatching of the silk-worms to be anticipated some days.

5th.—"That the roots possess *the remarkable property* of throwing up numerous small flexible stalks, without forming properly a principal trunk.

6th.—"That these stalks assume in a very short time a great length.

7th.—"That the leaves speedily acquire a remarkable development, and are promptly renewed.

8th.—"That these stalks or branches strike root, as cuttings, with *extraordinary facility* without particular care, even before they have acquired a ligneous or woody consistency."—[illegible] 12 to 16.

Various other persons bear similar testimony, particularly that it is "*destined to replace the common White Mulberry every where for feeding silk-worms.*" India therefore, it is to be desired, should not be the last industrial country into which it is introduced.

I regret that I have not a copy of Monsieur D'Homergue's small volume to offer to the Court, but sufficient may possibly have been said to lead the Hon'ble Board to deem it desirable to obtain a few copies from America through the medium of its booksellers, which copies might be useful to the Court's Collectors in the silk districts in India.

I have the honor to be, &c.

(Signed) W. H. Sykes.

NEW APPLICATION OF WOOD-OIL TO ECONOMICAL PURPOSES.

The Secretary next submitted a letter from Mr. Laidlay, of Surdah, communicating some valuable information relative to the application of the wood-oil, obtained from the Dipterocarpus trees of the Tenasserim Province in acting as a solvent to Caoutchouc. Mr. Laidlay mentions that he discovered this property some months ago, and he prepared some cloth with the solution for the purpose of submitting it to the inspection of the Society. The process adopted was simply to cut the Caoutchouc into small pieces, and then drop a sufficiency into a bottle of the oil. In the course of a few hours the Caoutchouc swells, and must then be frequently stirred to facilitate the process. If heat be applied, complete solution is speedily effected, but several days are required at the ordinary temperature of the atmosphere.

The solution thus prepared may be spread on cloth, which is thereby rendered water-proof.

LAC INSECT ON PEEPUL TREES.

Mr. Rose, of Ramnaghur Factory Moorshedabad District, forwarded an interesting communication to the Society, relative to the existence of the lac insect in great quantities on several peepul trees[*] in a village in his neighbourhood. Mr. Rose considers, from inquiries lately made, that the lac insect will thrive on many trees peculiar to the plains, and is at this present moment to be found on such trees. The subject is one which may be regarded as of great importance, and Mr. Rose is anxious therefore to give the result of his knowledge on the subject.

ARRIVAL OF SAXON RAMS IN CALCUTTA.

A note was read from Mr. Storm wishing to make known to the Meeting of the Society, that he has imported from Van Dieman's Land, a certain number of Saxon Rams for the purpose of making an experiment to improve the wool of this country, and that having more Rams than he requires for that purpose, he should be glad to dispose of a few of them at 250 rupees each, the price they cost him.

Ficus Religiosa.

February 12, 1840.—General Meeting.

The Hon'ble Sir Edward Ryan, President, in the Chair.

(Eighteen Members present.)

The Proceedings of the last Meeting were submitted and confirmed.

The gentlemen proposed at the January Meeting, were duly elected Members of the Society, viz.

Capt. De Bude, Messrs. B. R. Muirhead, C. T. Sealy, and W. S. Alexander, Capt. Mathew Smith, Messrs. H. R. Leyburn, J. O. Beckett, J. A. Deverell, T. C. Morton, George Lindsay, George Vint, Robert Macnair, E. G. Dubus, E. Dubus, Junior, P. Burnett, and D. Lethangie.

The names of the following gentlemen were read as candidates for election:

William Quintin, Esq., of the Civil Service,—proposed by Mr. F. C. Smith, seconded by Mr. W. M. Dirom.

Captain E. P. Nisbet, of the ship *Windsor,*—proposed by Dr. Spry, seconded by Dr. Strong.

Geo. Henderson, Esq., Attorney,—proposed by Mr. Chas. Huffnagle, seconded by Dr. Spry.

James Davidson, Esq., of the Civil Service,—proposed by Mr. R. H. Clarke, seconded by the Secretary.

F. Williams, Esq., of the Civil Service,—proposed by Mr. R. H. Clarke, seconded by the Secretary.

H. Astell, Esq., of the Civil Service,—proposed by Mr. R. H. Clarke, seconded by the Secretary.

R. H. Rattray, Esq., of the Civil Service,—proposed by Dr. Spry, seconded by Dr. Strong.

Major J. R. Ouseley, Political Agent at Hazareebaugh,—proposed by Mr. F. C. Smith, seconded by the Secretary.

A. De H. Larpent, Esq., (Firm of Cockerell and Co.)—proposed by Mr. W. F. Fergusson, seconded by the Secretary.

Baboo Huronauth Roy, (Noral, Jessore,)—proposed by Mr. Wm. Bennett, seconded by the Secretary.

Thomas Charles Cadogan, Esq., (Firm of Bagshaw and Co.) —proposed by Mr. R. J. Bagshaw, seconded by Mr. C. J. Richards.

Edward Whyte, Esq., (Firm of Mackenzie, Lyall and Co.) —proposed by Mr. Charles Huffnaglé, seconded by Dr. Spry.

Mathew Herring, Esq , of Bishenauth, Assam,—proposed by Captain Francis Jenkins, seconded by Dr. Wallich.

Baboo Ramgopaul Ghose,—proposed by Mr. David Hare, seconded by Mr. A. C. Dunlop.

C. C Fussell, Esq., (Indigo Planter, Tirhoot,)—proposed by Mr. W. P. Downing, seconded by Dr. Spry.

PRESENTATIONS TO THE SOCIETY.

Library.

1. Proceedings of the Agricultural and Horticultural Society of Madras for the months of July, August and September 1839.—*Presented by the Madras Agricultural and Horticultural Society.*

2. Madras Journal of Literature and Science, No. 24.—*Presented by the Madras Literary Society.*

3. Lecture on Agriculture, its Mechanics, &c.—*Presented by the author, Mr. G. F. Speed.*

4. Proceedings of a Special General Meeting of the Agricultural and Horticultural Society of Madras.—*Presented by the Madras Society.*

5. Report of the Sittings of the Committee of Agriculture established at Bourbon, as printed in La Feuille Hebdomadaire de L'ile Bourbon.—*Forwarded by M. Bedier.*

6. Phipps's Statistics of Ship-building in India, &c.—*Purchased by the Society.*

7. Two copies of a Catalogue of the Plants growing in Bombay and its vicinity, spontaneous, cultivated or introduced, as far as they have been ascertained. By John Graham, Esq. *This most useful work has been published under the auspices and for the use of the Agricultural and Horticultural Society of Western India. Not a single plant has been put down which has not been seen and examined either by the author or his able colleague Mr. Nimmo.—Presented by the Agricultural and Horticultural Society of Western India.*

Museum.

1. A minute sample of Cotton from the Tipperah Hills.

Mr. Wise, the Superintendent of the Affairs of the Rajah of Tipperah, who forwards this, states that nearly 100,000 maunds (3572 tons) of such Cotton are annually brought down by the Hill tribes subject to the Rajah of Tipperah. The Cotton seed lately supplied to Mr. Wise by the Society he proposes distributing in the Tipperah Hills.

2. Two boxes of different sorts of English Vegetable Seeds.—*Presented by Captain Nisbet of the ship Windsor.*

3. A sample of a peculiar kind of grain grown on the Coast of the Hon'ble E I. Company's newly acquired Province of Amherst, and called by the Natives "Kyeik Isae." The plant whence this seed is obtained, is stated by Mr. Riley, who presents it to the Society, to be of a very hardy nature, and thrives upon almost any kind of soil, yielding a good amount of produce, and in taste resembling Wheat. Dr. Wallich stated to the Meeting that the seed now submitted was from the Coix lachryma.

4. A Salacot or Planter's Hat. such as is universally worn at Manilla, both by Europeans and Natives. Presented by Mr. Piddington, who states that after an experience of twenty years he has found it to be a hat or cap very far superior to any other, for those whose business obliges them to exposure in the sun, not only for the shade it affords to the face, but (and in this consists its peculiar advantage), in the freedom with which, by means of the basket-work crown within, it allows the perspiration of the head to be freely carried off.

5. A paper of Caubul Drum-head Cabbage Seed ; Caubul, Candahar, and Bokhara Melon Seeds, Candahar Cherry-stones and Caubul Red Clover Seed.—*Presented by Col. C. C. Smyth.*

6. A sample of Cotton, second year's growth, from Sea Island seed, grown on the sand upon Kanker soil on the banks of the Ganges at Cawnpore, without attention to irrigation or pruning.—*Presented by Dr. Campbell.* (This Cotton was pronounced to be of a very superior kind.)

7. Two Knole Kole plants from Hidgellee.—*Presented by J. H. Barlow, Esq.* These plants attracted much attention, from the circumstance which induced Mr. Barlow to forward them to the Society—namely, their being raised from *sprouts* and not from *seed.* The present is the second year of trial of this Horticultural experiment with Mr. Barlow, and altogether he has succeeded in raising eleven plants. The facility with which early Cabbages are raised from sprouts induced Mr. Barlow to undertake the experiment with Knole Kole. The method pursued is not to cut the Kole, but allow the plant to grow on in the soil till it ripens and breaks into three or four portions. From each of these portions sprouts are thrown out. The divisions are separated from the old root, and the sprouts cut off from them with a sufficient portion of the division to

serve for the protection of the roots of the young sprouts. These are put in some cool place and watered, being protected by mats from heavy rain.

8. A sample of Cotton grown in the Bhutty States.—*Presented by Lieut. E. I. Robinson, Superintendent of the Bhutty States.* (This Cotton is of a very inferior quality.)

9. A specimen of a plant growing in abundance in the vicinity of Tipperah, and sent to the Society for its beauty.—*Presented by Henry Roe, Esq.* The Meeting was informed by Dr. Wallich, that this very pretty specimen of the Moss Club tribe was the Lycopodium cernuum.

NOTICE OF MOTION.

Application of the Sum of 10,000 *Rupees for the purpose of contributing towards a New Building.*

The Hon'ble the President intimated to the Meeting, that the business which he had first to direct the attention of the Members to, were matters connected with the New Building, for the consideration of which a Special General Meeting had been held some months since, and a Committee subsequently appointed. Since then a plan and estimates had been prepared, and an application made to the Government for the appropriation of the South-east angle of Tank Square, as being a spot well calculated to meet the convenience of the great majority of those for whom the building was designed. He therefore desired to give notice of the following motion for the next General Meeting : "That the sum of Co.'s Rupees 10,000 be allotted out of the fixed assets of the Society for the purpose of contributing, in conjunction with the Metcalfe Public Library Building Fund, the Metcalfe Testimonial Fund, and the Calcutta Public Library Fund, towards the erection of a house, at the S. E. corner of Tank Square, for the joint accommodation of these several institutions."

COTTON REPORT.

The attention of the Meeting being called to the report which had been framed by the Special Committee on Cotton, it was moved by Mr. Dearie and resolved, that as the time of the Members was much wanted to complete their correspondence for the Overland Mail the subject be postponed to Wednesday the 19th instant, when a Special General Meeting shall be held for the consideration of this important business.

AWARD OF PRIZES FOR CATTLE.

The award made by the judges, at the Exhibition of Cattle, held on the 1st instant, was next brought forward and passed.

Agreeable to resolutions previously made, the Exhibition of Cattle for the year 1840 took place on the morning of the 1st instant, and the judges beg to report the following award of prizes :—

Imported Neat Cattle.

Nos. 1 and 2. For the best and second best Imported Bulls of the year 1839, there were no competitors.

Produce.

No. 3. (Private mark D. 4.) For the best produce of Imported Cattle, a premium of 250 rupees and the gold medal, was awarded to Mr. C. Huffnagle.

No. 4. (Private mark E.) For the second best produce of Imported Cattle, a premium of 200 rupees and the silver medal, was awarded to Messrs. Cook and Co.

No. 5. (Private mark B.) For the best Bull Calf of any denomination calved in 1839, no prize awarded.

No. 6. (Private mark D. 5.) For the best Cow Calf of any denomination calved in 1839, the silver medal was awarded to Mr. Huffnagle.

Sheep.

No. 1. (Private mark F. 1.) For the best Imported Wooled Merino Ram of the year 1839, not less than two years old, a premium of 200 rupees and the gold medal, was awarded to Mr. W. F. Gibbon.

No. 2. (Private mark G. 2.) For the second best Imported Wooled Merino Ram of the year 1839, not less than two years old, a premium of 150 rupees and the silver medal, was awarded to Mr. W. Storm.

No. 3. For the best pen of Merino Ewes to the number of six, there were no competitors.

No. 4. (Private mark F. 3.) For the best thorough-bred Merino Ram Lamb, lambed in 1839, the gold medal was awarded to Mr. Gibbon.

No. 5. (Private mark F. 4.) For the best thorough-bred Merino Ewe Lamb, lambed in 1839, the silver medal was awarded to Mr. Gibbon.

No. 6. (Private mark F. 5.) For the best Lamb, either Ram or Ewe, cross of a Merino Ram and an indigenous Ewe, lambed in 1839, the small silver medal was awarded to Mr. Gibbon.

The successful competitors of sheep are requested to send in the fleece of their prize sheep when shorn, and the judges have gratification in noticing a marked improvement both in quantity and quality of stock shorn this year over that of the preceding one.

W. P. GRANT.
JNO. HUGHES.
HENRY H. SPRY, M. D.

Calcutta, Feb. 3, 1840. *Secretary.*

THE ANNUAL REPORT.

The annual report of work done by the Society during the past year, was then submitted by the Hon'ble the President, and on the motion of Dr. Wallich, seconded by Mr. Piddington, it was resolved that the same be printed.

GOVERNMENT RESEARCH INTO THE NATURAL PRODUCTIONS OF CEYLON.

The next important document brought forward, was a letter from the Right Hon'ble J. A. Stewart Mackenzie, Governor of Ceylon, relative to an application which had been made to him by the Secretary, touching the trees and vegetable productions of that island with reference to its soil and climate.

His Excellency states that it will give him the greatest pleasure to be able to communicate information on the subject, as he considers it one the importance of which he is so fully sensible, and the development of which he is so well aware will be followed by great improvements in his colony, and undoubtedly in India also, if reciprocal information upon this subject be given and taken by those who can afford it, that he shall endeavour seriously to apply himself to inquiries to which the letter of the Secretary would lead. The real difficulty, His Excellency states, is—first, the expense that must attend a general and a thorough inquiry; and, secondly, of the almost entire want there is of instruments to carry that inquiry into execution. The superintendency of the Royal Botanic Garden at Peradenia is, however, now undergoing a change; and as soon as Mr. Normansel, the new Superintendent, is placed in full possession of the Department, His Excellency states he shall not fail to lay down some plan for obtaining the information required in the form of classification as annexed in the Secretary's letter.

ESTABLISHMENT OF A BRANCH SOCIETY AT AKYAB.

A letter from Lieutenant Latter was next read, announcing that Resolutions (copy of which are furnished) were passed by

Captains Bogle and MacGrath, Lieutenants Apthorp, Phayre, Edwards, Baker, Eliot and himself on the 3rd of December, establishing a Society at Akyab to be denominated "The Arracan Branch Agri. and Horticultural Society."

Lieutenant Latter in the course of his letter states, that a good and convenient piece of ground has been enclosed, and begs a supply of seeds may be supplied to him. The soil of the garden is like that of the entire island of Akyab, light and sandy, and requires great trouble in manuring. The usual forest trees, such as Teak, Iron-wood, Gurjun (wood-oil tree), Toon, Jarul, and different species of Ebony, &c. can be procured from the interior in any quantity. Tobacco, Cotton and Rice are indigenous. Indigo grows wild, and Coffee thrives well when slightly shaded. There is however a great want of esculent vegetables. He has no doubt these may be acclimated, an object greatly to be desired, if only for the benefit of the crews of the numerous vessels continually on the coast.

AGRICULTURAL REPORT FROM THE TENASSERIM COAST.

Mr. Riley at Amherst favors the Society with the result of experiments made under his care, at the request of Mr. Blundell, the Commissioner of the Province.

Jaunpore Maize has not proved so good as that already cultivated by the Burmese. Bourbon, Seychelles, Sea Island, and Malta cotton seeds have had one year's trial, but the seed for the most part proving rotten no satisfactory results have been obtained. The Guinea grass has thriven most luxuriously—so have the arrow-root plants, the black bean and sugar-canes.

HORTICULTURE IN NEPAUL.

Mr. Hodgson, the British Resident at the Court of Nepaul, intimates that he can let the Society have a supply of good red and white clover seed and good apple grafts of various excellent kinds of European apples. Mr. Hodgson inquires further whether the Society requires occasional vegetable seeds or medical drugs, and wishes a supply of young plants of currants, gooseberries, and cherries in return.

Dr. Spry informed the Meeting that it was his intention of sending to Mr. Hodgson some of the seed, which had lately arrived from Afghanistan, and that he had despatched half of a box of the vegetable seeds, which Captain Nesbit had so kindly placed at his disposal.

COMMITTEE OF AGRICULTURE AT BOURBON.

Two letters from Mr. Bedier at the island of Bourbon were presented, acknowledging the honor he felt at having the gold medal of the Society awarded him for his services in promoting the advancement of the Cochineal cultivation in India, and assuring the Society that his best exertions shall be given to this most desirable object.

In pursuance of this intention he purposes in the month of April next, forwarding another consignment of insects which he trusts will reach in good order. He further adverts to the formation at the island of Bourbon of a Committee of Agriculture for the purpose of promoting the resources of the colony, and desires to open a correspondence with the Agricultural and Horticultural Society of India, which request was immediately acceded to by the Meeting.

FEBRUARY 19, 1840.—SPECIAL MEETING.

The Hon'ble Sir Edward Ryan, President, in the Chair.

(Twenty Members present.)

Read the following letters, bearing on the cultivation of Cotton in India—

1st.—From Major W. H. Sleeman, dated Moradabad, February 6, 1840.

2nd.—From Captain Jenkins, Agent of the Governor General in Assam, dated January 4, 1840.

3rd.—From D. F. McLeod, Esq., Assistant to the Agent of the Governor General in the Saugor and Nerbudda Territories, dated January 6, 1840.

4th.—From Archibald Sconce, Esq., Collector at Chittagong, dated December 29, 1839.

Read a letter from F. G. Bruce, Esq., of Calpee, to the address of the Secretary, forwarding copy of a letter submitted to the Secretary to the Government of India with the Governor General.

Read a letter from the Secretary to Government of India, dated 15th February, transmitting for submission to the Society, a second letter from Mr. Bruce.

The Hon'ble the President informed the Members, that the meeting for which they were assembled was a special one, for the purpose of taking into consideration the Report made by the Cotton Committee on the best mode of carrying into effect the wishes of Government relative to the improvement of the Cotton cultivation in India.

Paragraph by paragraph, in the order in which each appears in the report, was then read and discussed. The whole having undergone due consideration, and different emendations having been made, it was moved by C. K. Robison, Esq., seconded by G. W. Johnson, Esq., and carried unanimously, that the report as now amended be adopted and transmitted to Government by the Secretary*.

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* For this Report see Article I.

MARCH 11, 1840.—GENERAL MEETING.

The Hon'ble Sir Edward Ryan, President, in the Chair.

(Fifteen Members present.)

The proceedings of the last General Meeting and of the Special Meeting held on the 16th February, were submitted and confirmed.

The Gentlemen proposed at the February Meeting were elected Members of the Society, viz.:

Messrs. Wm. Quintin, Geo. Henderson, James Davidson, F. Williams, H. Astell, and R. H. Rattray, Capt. E. P. Nisbet, Major J. R. Ouseley, Baboos Hurronauth Roy and Ramgopaul Ghose, Messrs. T. C. Cadogan, A. De H. Larpent, Edward Whyte, Mathew Herring and C. C. Fussell.

The names of the following gentlemen were read as candidates for election:—

Dr. Douzell of Chenchouah Factory, Pubna,—proposed by Mr. Chas. De Verinne, seconded by Dr. Spry.

Forbes Scott Brown, Esq. of Penang,—proposed by Dr. Wallich, seconded by Dr. Spry.

Alex. Stuart Brown, Esq. of Penang,—proposed by Dr. Wallich, seconded by Dr. Spry.

C. E. Newcomen, Esq. (Firm of Cockerell and Co.)—proposed by Mr. W. F. Fergusson, seconded by the Secretary.

F. R. Hampton, Esq. Secretary to the Assam Tea Company,—proposed by Dr. Spry, seconded by Dr. Wallich.

Adam Stewart Gladstone, Esq. (Firm of Gillanders, Arbuthnot and Co.)—proposed by Dr. Spry, seconded by Dr. Wallich.

Thos. Hugon, Esq.—proposed by Mr. Piddington, seconded by Dr. Spry.

APPROPRIATION OF THE SUM OF 10,000 RUPEES FOR THE PURPOSE OF A BUILDING.

The Hon'ble the President, adverting to the motion of which he gave notice at the last Meeting, begged to recal to the recollection of the members the acquiescence which had been accorded by the Society at a former Meeting, to assign a portion of the fixed assets to the purpose of a building for the accommodation of the Society, and he now begged to propose that the sum of 10,000 rupees should be passed for this purpose.

The Right Hon'ble the Governor of Bengal had not yet returned an answer to the letter which had been addressed by the Society with reference to the grant of a piece of ground, but he (the President) believed he might state that a suitable site would be granted, although the locality of Tank Square might not be the one assigned.

The motion was then put and carried unanimously.

PRESENTATIONS TO THE SOCIETY.

Library.

Two copies of a Memoir on the proposed improvements in Indian Cotton, by *Henry Piddington.—Presented by the Author.*

Museum.

1. Plant, stem, flower, and bark of the Paper Plant of Nepaul, called in the language of the country Daiercoon or Daircoon (*coon* being for a tree), from the hills about Darjeling.—*Presented by Dr. Pearson, Civil Surgeon at Darjeling.*

Dr. Spry, in submitting this specimen to the Meeting, mentioned that a full description of this plant, which is the Daphne Cannabina of Lawreire and D. Odorata of Thunberg, has been fully described by Dr. Wallich in the 13th volume of the Asiatic Researches, and is the identical plant whence the almost imperishable paper of Nepaul, (the particulars of which, by Mr. Hodgson and Dr. Campbell, are to be found recorded in the 5th volume of the Transactions of the Society,) is prepared. The flower is full of odour and much resembles the Jessamine in smell. A sketch of the plant on Nepaul paper is to be found in Dr. Wallich's description. For its fibre too, the plant would seem to be well worthy of attention.

2. Seeds and corns of various kinds from the hills about Darjeling.

Dr. Pearson, who forwards these as a contribution from the Darjeling Plantation Society, mentions that there are at least three if not four sorts of Oak at Darjeling. One an immense tree affording a dark mottled timber in appearance much like the English heart of oak, from 40 to 60 feet long, and 6 or 7 in diameter, or even larger still. One sort is what is called *Phalant** in Nepaul, and is said to resemble the "she oak" in Australia. It grows to 40 or 50 feet long, but Dr. Pearson has not seen any that is more than 2½ or 3 feet at most in diameter. The wood is close-grained, reddish brown in colour and mottled, and exceedingly tough, though easily split. It makes excellent tool handles, superior indeed to Ash itself, and would, Dr. Pearson considers, be valuable for gun-carriages; for although it splits readily yet it is a tough strong wood, and does not fly in splinters, besides warping less and being less affected by the weather than any wood with which Dr. Pearson is acquainted.

Some of the seeds forwarded are reported by Dr. Pearson to afford flowers of a delicious fragrance; one resembles a myrtle—a second a cherry—a third a chesnut—a fourth a large tree, having a broad leaf and most beautiful flower which hangs in clusters, and varies in shades of colour from deep crimson to light scarlet—a fifth are the seeds of a large, tall and very beautiful tree, having a leaf and wood which is very like the holly—and a sixth is the Geelah*. Dr. Pearson further stated that the consignment of plants sent by the Society to the Darjeling Garden, reached for the most part safe, and in tolerable good order. A second supply of vines, currant, apple, and pear trees, from the Cape, sent up by Mr. Bruce, reached in such excellent condition, that Dr. Pearson is anxious to give the particulars of packing. It appears the plants were packed in a long tin case with a quantity of reddish earth around them *quite wet*, so much so that at first view Dr. Pearson thought them rotten, but on examination found all to be alive and some to be budding. Some plants sent from America, which were packed amidst dry moss without earth and in tin cases, reached in a dead state. The Darjeling garden is getting on better, Dr. Pearson states, than could be expected. English potatoes and hive bees are much wanted at Darjeling.

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* *Phalaat* by the Parbuttees! Quercus Annulata.—H. H. S.

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3. Specimen of ginger, cotton, and wild yam produced in the neighbourhood of Darjeling and collected in the valleys by the Lepchas, *presented by Dr. Pearson*, who mentions in his note, that the yam plant is a creeper having a leaf much like a pawn leaf, but twice the size at the root, of which the yam is found at a depth of from three to four or five and even six feet. It is *quite uncultivated*, even *self-sown*, yet of a flavour and whiteness far surpassing that of the yam of the plains; some specimens are however of a pinkish purple hue. Dr. Campbell and Lieutenant Montgomery, from whom these particulars were obtained by Dr. Pearson, saw the plant growing in abundance on a recent expedition which they have been making. In the Lepcha language the plant is called "Bookli," in Purbuttiah "Turool," and in Bhotecah "Kew."

The ginger was pronounced to be a very superior article and well worthy of attention. The cotton is indifferent.

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* Mimosa Scandens.

4. Tea from the Tipperah Hills.

Mr. Watt, who forwards the leaves, states that while on a tour in the Tipperah Hills last month (February), his party came on large tracts of trees from which the leaves sent were taken; and considering it to be the Tea plant, a quantity of the leaves were taken into camp and prepared in a rough way by roasting in a fry pan, and then infused in boiling water. The result was, considering the hasty manner in which the article was got up, the infusion had really a very agreeable flavor of ordinary tea.

The examination of the leaf excited much curiosity among the members present from the circumstance of such an abundant supply of tea being found so near home as the Tipperah Hills, and although it was difficult from the leaf merely to pronounce whether it belonged to the genus "thea" or "camelia," yet in point of importance the distinction was not likely to prove of great consideration. The fact of the specimen sent imparting the flavor of ordinary tea shows how closely allied these two genera are.

5. Thirteen specimens of Wool from various quarters of the globe.—*Submitted by Mr. Robert Smith.*

6. China Aster plants in full bloom.—*Exhibited by Dr. Spry.*

These plants were raised from seed furnished by Colonel Smyth of the 3rd Cavalry, when at Cabul. The flowers vary in color. Some are white, others purple, and one plant is giving double flowers of a delicate peach blossom in color.

7. Coffee, Hemp and seeds of the Arnatto and Sapan trees. —*Presented by Dr. Strong.*

Dr. Strong designs the Bukkum* or Sapan seeds for distribution among members, as it forms a prickly good hedge and is a valuable wood for its dye. The Coffee was grown by Dr.

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* Cæsalpina Sapan.—H. H. S.

Strong at Rassapuglah, and was dried as recommended by the London brokers without sun, and has not the marks and blemishes the sample formerly sent to London by Dr. Strong had, which had been dried upon a masonry floor and in the sun, which causes the berry to crack, dries it too much, and in fact spoils it for taste and sale.

8. Fleeces of four sheep that obtained the prizes at the last Cattle Exhibition. No. 1, an imported Merino Ram; No. 2, a Merino Ram Lamb bred in 1839; No. 3, a Merino Ewe Lamb bred in 1839; No. 4, a half-bred Ewe Lamb by a Merino Ram and Patna Ewe in 1839.—*Presented by Mr. Gibbon.*

9. Six maunds of the Mauritius "pois noire," or black bean, from the Society's nursery.

10. A bag of the "pois noire" direct from the Mauritius.

Mr. Hugon, who forwards this present, states that on the island of Mauritius these beans are sown in the old cane fields, and by the thick covering they afford, the fertility of the soil is restored in two or three years. It is of hardy growth, and hardly requires any care. The bean affords a cheap and good nourishment for cattle.

It was also stated at the Meeting, that these beans when young afford an excellent dish for the dinner table, and in Hindustan is an admirable substitute for the broad bean of Europe.

11. A sample of cotton from the third generation of acclimated Peruvian plants.—*Presented by Mr. W. C. Hurry.*

Mr. Hurry states, that he has no doubt that any quantity required could be grown in Bengal. The plants are remarkably large and woody, and bear well*.

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* This remark coincides with the experience of Mr. Quantin at Palmasdeah near Sook Saugor, where the Peruvian cotton seed has *improved* under acclimatation.—H. H. S.

12. The leaves, flower and fruit of the purple-fruited "Granadilla," described in Part XVI. of the Encyclopedia of Gardening, p. 983.—*Presented by Major Wood.*

13. A Machine for separating cotton from the seed. This machine was made as an improvement on the Guzerat Churka. It has been invented by Mr. John Potter, of Manchester, and differs from the machine lately sent out to India as the invention of Mr. Houldsworth of Glasgow. Any number of them can be set in motion by an adequate moving power, a bullock could turn 20 or 30 of them. That shown to the Society is one of several lately imported into Calcutta. —*Exhibited by Mr. Owen Potter.*

14. A sample of Black Pepper from a garden at Barripore, about 16 miles from Calcutta.—*Presented by Mr. Homfray.*

This pepper is very good of its kind, and the plant whence it is obtained, grows luxuriantly at Barripore, where it appears, it was introduced some years ago by a gentleman from the eastward. The tree yields abundantly and grows without requiring any husbandry. Mr. Homfray will readily furnish cuttings to any one desirous of obtaining them.

IMPROVEMENT OF INDIAN WOOLS.

The first paper which engaged the attention of the Meeting was one on the interesting subject of Indian wools, from the pen of Mr. Robert Smith, who also has forwarded musters, thirteen in number, in illustration of his subject.

Mr. Smith, during a recent visit to England, directed his attention to the subject of the Wool trade in general, particularly with the view of ascertaining the proper steps to be taken in the improvement of our Indian Wools; and Mr. Smith thinks, that the result of his experience may not prove uninteresting to the Members of the Society, who may be engaged in the growth of this rising staple of our Asiatic territories. For much of the practical information contained in Mr. Smith's communication, he is indebted to his brother, who is of the firm of J. T. Simes and Co., Wool Brokers, London, aided by personal observation of the Wool stapleries in the South of Ireland.

The first step to be taken by the India Wool-grower will consist in selecting from the various breeds of Asiatic sheep, one which crossed by Australian or Cape Merino blood, *promises best to realize the expectations* which are entertained of an amelioration in the quality of India Wools. Without venturing a decided opinion on a point of so much importance, where all has yet to stand the test of experience, Mr. Smith thinks, after careful consideration, that we must look to the Punjaub and Khorassan as the localities from which to procure ewes; as it is from those quarters that the principal part of the Wool known in the home market as "East Indian," at present proceeds;—and which, though intrinsically of an inferior quality, is much superior to the wool produced in other parts of the East. The rams, as before mentioned, should be of New South Wales, or Cape stock; bearing in mind, that the surest method of establishing a valuable fleece in India, is not to commence by breeding "fine," but by gradually breeding "upward" from a coarse stock to a finer, until the best commercial standard is obtained, of which the climate is susceptible. But as this part of the subject is scarcely within the intention of his paper, Mr. Smith must refer those who are desirous of obtaining particulars respecting the various races of sheep, their breeding and management, to a volume in the Library of Useful Knowledge for 1837,—entitled "*Sheep, their breeds, management and diseases,*" which contains very copious and correct information on all points connected with this topic.

A comparison of the specimens of wools, submitted by Mr. S. from different quarters of the world, will enable a ready judgment to be formed of the essentials, in which the superiority of the one over the other consists. The doughy, elastic feel, fineness, softness, and *spiral* fibre of the German Merino, Sydney superior, Sydney average, Spanish Merino, Van Dieman's Land, English Merino—compared with the inelastic, coarse, hairy and straight composition of the Mogadore, Russian "Zigai," East India superior, Peruvian, Smyrna, East India average, Russian "Donskoi," and English Wether, sufficiently indicate the difference. Yet this is principally the result of cultivation; since the specimen of English Wether was taken from a South Down Wether in England, and can be matched from almost any Patna bred Sheep pasturing on the *meidan* of Calcutta. Yet inferior as the latter specimens seem, they are in demand for blanketings, carpets, druggets, and all low goods, when, as is frequently the case, English wool is at a full price; though at other times they could not command a ready market. Respecting East India wool, the following remarks of an eminent wool-broker may be quoted:

"The wool is applicable to the manufacture of blankets, paddings, and all articles where weight is requisite. As at present imported, it has more the appearance of wool shaven as hair, than shorn as wool, but proves in manufacture better than it looks. Although not positively improved in quality, it has improved of late in public estimation, coming to hand whiter, better assorted, and got up; and at its relative value is currently saleable. The last quotations are,—

Superior white, free from grey hair, soft and kind (relative), ...	10*d.*	to	11*d.*	per lb.
Fair quality, and fair in other respects,	8	to	9	,,
Inferior,—mixed with yellow, or grey,	6	to	7	,,
Grey and low, ...	4½	to	5	,,

From the prices paid, with the costs and charges, it is said not to leave a profit, and from the remarks made it is evident, it must be improved in quality, before it can assume a firmer place in the home market."

When the improvement which has been effected in Australian wools is taken into consideration, the suggestion naturally presents itself, whether the same result may not be produced in India, possessing as it does so many varieties of indigenous sheep with a choice of climates, and the advantage of procuring within an easy distance, the male stock which is to lay the foundation of improvement. Without judicious selection of climate, the most careful breeding will avail little. The Cape commenced long before the Australian Colonies; but with every precaution, the South African wool affects an unkindly handle, which is attributed to the nature of the soil and climate.

The remarkable improvement in the Australian wools is not to be fairly tested by comparing them with those of Germany. In the latter country, wool is grown as an exotic, in-door production, the sheep being carefully housed during a great part of the year, and the rapid decline in the fineness and every other property in which the excellence of German wool consists, is so great, when the least neglect or undue exposure to the weather has been suffered to take place, that by one year's bad management the produce of a flock is often deteriorated to the extent of 25 per cent.

Not paying attention to this difference of system, the earlier wool growers in Australia attempted to raise wool, which should compete with the finer produce of Germany, and failed; and even had they succeeded, would only have had a fleece weighing 1½lb. at 3s. = 4s. 6d. They now have a less costly but more marketable staple, averaging 4½lb. at 2s. = 9s., and not unfrequently 5 to 6 lb. per fleece; but it took some years to retrieve the error that had been committed at the outset.

The following is the relative standing of the different kinds of wool sold in England

1. { Saxon.
   { Silesian.
2. Odessa Merino,—produce of flocks imported into Russia.
3. Australian.
4. { Spanish } Merino.
   { Cape }
5. { English } Merino.
   { Italian }
6. English improved cross breeds.
7. Zigai,—called the original Macedonian breed.
8. Italian cross breeds.
9. { Italian Native.
   { Russian Donskoi.
   { „ Native.
   { Peruvian.
   { East Indian.
   { Smyrna.

The following wools are washed on the sheep's back, and contain a large percentage of grease or yolk :

Saxon and Silesian, Australian, English, Italian, Peruvian.

The following being washed after shearing are white and dry :

Spanish, Odessa, and Russian, of all kinds.

The prices in the London market are principally regulated—

As to the finer kinds,—by the result of the German wool fairs in the month of June.

Of Spanish, Odessa, and the middling descriptions,—by the sales of Australian wool in July.

Of *all*,—by the English clip.

The small proportion which the whole amount of imported foreign and colonial wool bears to the English clip, may be estimated from the annexed statement :

The annual produce of the United Kingdom is *one million twenty thousand* packs of 240 lbs. each.

In 1838, the importations were as follows :

German,..............	79,320	bales
Spanish,.............	8,577	
Australian,...........	32,200	
Sundries,.............	61,675	
	181,772	

The importation of Australian wools was in 1814, 32,000 lbs.; in 1838, 32,000 *bales* of 260 lbs. each.

The progressive increase in the importation of East India wools has been as follows ;

1835,....................	1500	bales.
1836,....................	3400	,,
1837,....................	5600	,,
1838,....................	6117	,,

Bombay has taken the lead in this new speculation, and it is known, that more than one house in Liverpool is engaged in plans for extending operations in that quarter. It may not be uninteresting to learn, that the late ruler of Lahore, Runjeet Sing, not long ago forwarded a quantity of shawl wool for sale. It was, however, so indifferently got up, and so full of "kemp" or short hairs, as to be unsaleable for any thing near the price put on it.

Much valuable information for growers and shippers is contained in the following circular, addressed by Messrs. J. T. Simes and Co. to Australian constituents, and the remarks are equally applicable to India :

"It cannot fail to afford gratification and encouragement to the Australian wool-growers, to learn that the produce of their flocks is at this time in very high and deserved repute in England. This reputation arises chiefly from the peculiar softness of the cloth, and other fabrics made from these wools; it is therefore very desirable, that the growers should exert themselves to combine the highest possible degree of fineness with this softness of handle, making it a rule to breed from rams of the finest wool and purest race they can obtain; purity of blood being the great essential towards producing wool of that uniform fineness of fibre, elasticity and closeness of staple, which alone can enable the manufacturer to make a cloth small on the face as well as soft to the touch.

Defect in breeding has undoubtedly much to do with the coarseness of the hair of a great portion of the wool grown in Australia. To this general failing some choice flocks in each Colony are decidedly exceptions, and it is only by carefully attending to purity of blood, in the selection of the rams, that the inferior flocks can be brought to the same degree of perfection, and that perfection when arrived at, can only be maintained by constant attention to fresh crossing with pure blood.

Though it is highly necessary to the perfection of the fleece, that its fibres should be acted upon by the air, it is also strongly recommended that fine wool flocks should be kept under sheds every night, their constitutions being unable to sustain the effect of the cold nights and heavy dews, which commonly succeed the hottest day, from which transition they must be carefully guarded: care should therefore be taken to provide a constant succession of clean litter in the sheep stalls, that the full effect of perspiration on the fibre, may not be interfered with, by the fleece being loaded at the extremities with an accumulation of filth of any sort.

It is of great importance that the fleece should be well washed, that the wool may be brought to market with as bright a color as possible; every convenience, and a plentiful supply of pure water should therefore be provided; a running stream being most desirable.

The preferable mode of washing is that which is performed before shearing, according to the German manner; some growers have tried the plan of washing after the fleeces have been shorn and sorted; and, as is supposed, have used tepid water, following the French and Spanish method; but this has not been approved of by the buyers generally, and particularly by those who buy for combing purposes.

The breaking of the fleece and washing after shearing, gives the wool more the appearance of Spanish than of German wool, and consequently reduces it to a lower standard of comparison. It is well known, that the sheep of those German flocks that are best washed, are after that operation driven into some shed strewed with clean litter, or penned up with hurdles on clean grass; that the utmost care is taken to prevent their exposure to dirt or whatever else might tend to sully their whiteness, and that they are not shorn until a sufficient degree of moisture is deposited in the fleece by perspiration, to impart a soft handle to the wool. It may here be added that it is very important, if possible, to prevent the sheep from filling their fleeces with grass seeds, broken leaves, and other extraneous substances which cannot be removed in the operation of washing, and which are productive of labour and expense in every process of manufacturing; in some cases indeed rendering wools almost unsaleable. It may here be observed, that so conscious are the Spaniards of the superiority of the German mode of washing and assorting, that they are making every effort to introduce it.

In order to assimilate the Australian wool as much as possible with the German in preparing it for market, the fleeces should not be broken, but merely divested of the breech and stained locks, and so assorted or arranged that each package may contain fleeces of the same character as to color, length of staple, fineness of hair, and general quality.

If the washing has been performed at the same time and place, and with an equal degree of care, the color is likely to be uniform, and it will then only be necessary to attend to the casting of the fleeces as to length, fineness and general quality; but if a large grower has flocks of different breeds, and fed on different soils, care should be taken that the fleeces be separated first as to color, and then again as to length, fineness, &c.

The fleeces being assorted, as already suggested, should be spread one upon another, the neck of the second fleece being laid upon the tail of the first, and so alternately to the extent of eight to ten fleeces, according to their size and weight. When so spread, the two sides should be folded towards the middle, then rolled together, beginning at each end and meeting in the centre, and the roll or bundle so formed, held together by a slight pack-thread.

The baggage should be of a close, firm and tough nature. The material hitherto most generally used, has been sail canvas, which very ill resists bad weather on a long voyage, and when received here even in favorable condition, is so dry and crisp that it will tear like paper. A thicker, twilled, more flexible and tough material would be preferable. The size and form of the package may be in length about nine feet, and width four feet, sewed up on the two long sides, and at one end,—the other end being left open, and the sheet so formed, being suspended with the open end upwards, to receive the bundles made up as before directed, which are to be put in one at a time, one of the flat sides of the roll or bundle being put downwards, and so on in succession, being well trod down until sufficiently filled for the mouth to be closed. This is the German mode of packing; but it is doubtful whether smaller packages, of the dimensions that have been hitherto sent from the two colonies, may not be more convenient for so long a voyage.

The operation of screwing should be discontinued where it has been practised; as the pressure by the screw, and remaining compressed during the voyage, occasions the wool to be caked and matted together in a manner that is highly prejudicial to its appearance on arrival. The practice also of winding up each fleece separately, and twisting a portion into a band, is productive, in a minor degree, of the same prejudicial effect, and it is to avoid this, that the making German bundles of eight or ten fleeces, is suggested.

It is very desirable that the wool should be shipped and sent away from both Colonies, if possible, in all the month of January, so as to arrive in England in June.

J. T. Simes & Co.

Coleman Street, London, 1st March, 1838.

COMMUNICATION FROM THE EAST INDIA AND CHINA ASSOCIATION.

The Association in returning thanks for the several numbers of the Society's Proceedings which were forwarded, desires to state how much that body appreciates the desire of the Agricultural Society of India to make it acquainted with the progress and improvement of the Agriculture of India, in which it takes a lively interest, and always feels it to be its wish to promote. Such an interest is taken by the Association that it desires all the former numbers of the Society's Proceedings may be sent; and that the Society may be convinced how strenuously the Committee of the Association has advocated the subjects of East India Rum and Tobacco, a copy of the Papers the Committee has addressed to the Government is sent, and the Committee trusts that the ensuing Session of

Parliament will not pass by without an equalization in the duties being effected.

The papers on the subject of the growth of Cotton, which the Society sent to the Association, are deemed by the Committee to be very valuable; and the Committee expresses a hope that the several trials will lead to that success which will eventually make the Manchester looms in a great measure independent of America.

Extract of a letter addressed to the Right Hon'ble C. P. Thomson, President of the Board of Trade, London, 19th April, 1839.

"The Committee of the East India and China Association beg leave again most respectfully to bring under your reconsideration the difference in the duty charged upon spirits and tobacco, the produce of the East and West Indies; and they feel a conviction that the present Session of Parliament will not be allowed to pass without provision being made by law to put them on an equal footing, because it has been admitted in the instance of sugar and coffee, that it is not a just system of taxation for the produce of the British Empire to be charged with higher duties than those of another."

PROMISE OF SEEDS FROM THE INDIA HOUSE.

The last overland has brought a letter from Professor Royle to the address of Dr. Wallich, in which the former refers to an application which was made to him for a supply of seeds, in accordance with the announcement made by the Court of Directors in their despatch to the Right Hon'ble the Governor General on the 13th of February last year.

Extract. "I have had a letter from Dr. Spry applying for seeds. I have mentioned the subject to the authorities at the India House, and I have obtained permission to send seeds to the Agricultural Society."

AN ANNUAL MEETING OF THE MEMBERS OF THE BERHAMPORE SOCIETY.

The next communication which was submitted was the Report from Mr. Herklots, the Secretary of the Branch Society at Berhampore, of the result of the Meeting held for the exhibition of Horticultural prizes.

The Meeting was held at the house of the President of the Branch Society, F. W. Russell, Esq., Civil and Sessions Judge of Moorshedabad, and there were present on the occasion Messrs. F. A. Lushington, C Smelt, J. Alexander, Rev. Mr. Paterson, Major Norton, Lieut. Goldie, Baboo Kissenchunder Chowdry, Ramanaut Majoondar, J. D. Herklots, Esq. and several visitors.

The native gardeners with their several baskets of vegetables were introduced to the Meeting, and the President selected the Rev. Mr. Paterson, Major Norton, and Lieutenant Sissmore to be the umpires

The first prize was won by Mr. Herklot's gardener for the best Brinjals, Carrots, Endive, Sweet Potatoes, Potatoes, Love Apples, Turnips, Cross Beans, Plantains, Oranges, Gooseberries and French Beans.

The second prize to Mr. Russell's gardener for the best supply of Peas, Curly Cabbages, Brussel Sprouts, Crowned Cabbage, Capsicums, Celery, Leeks and French Beans.

The third prize to the Society's gardener for the best Cauliflower, Cabbage, Country Carrots, Beet-root, Lettuce, Turnips and Radish.

Three medals were awarded, and the sum of fifty rupees in money. It was also resolved that a second Meeting should be held in February at the President's house, when three other silver medals, the expense of which Baboo Takoor Doss Mookerjee had generously offered to bear, should be awarded.

HORTICULTURAL EXHIBITION AT HOOGHLY.

The report of Dr. Esdaile, Secretary of the Branch Society at Hooghly, of the result of the Second Annual Horticultural Exhibition held at Hooghly, for prizes, on Saturday the 1st ultimo, was next submitted. The two silver medals allowed by the Parent Society and the sum of thirty-four rupees were awarded to competitors: and Dr. Esdaile mentions what he feels assured the Parent Institution will be glad to learn, namely, that the number of Exhibitions this year greatly exceeded that of last. On the first occasion only three or four native gardeners came forward, whereas on the last show *the number exceeded fifty*.

AGRICULTURAL AND HORTICULTURAL EXHIBITION AT AZIMGHUR.

Mr. H. C. Tucker, the officiating Collector of the Azimghur District and Secretary of the Branch Society there, communicates the particulars of the exhibition held at the station of Azimghur, to compete for prizes amounting to the sum of 300 rupees which he had set apart as a donation from himself to encourage the people of his District to exertion.

Mr. Tucker in his interesting communication states, that the Annual Meeting for the Parent Society's prizes and his own, came off on the 9th January in the presence of the respectable Landholders, both European and Native of the District.

The competition among the growers of the Otaheite Sugar-cane was very spirited, there being no fewer than twenty competitors.

A silver medal and 50 rupees was won by Mr. R. Nicholson, whose ten heaviest canes weighed seventy lbs. At the meeting Mr. Nicholson stated that he had, during the present year, sold seed-cane, the produce of one biggah of land, for 500 rupees, an announcement which created a great sensation among the Landholders present at the Meeting. Mr. Nicholson also exhibited rattoons of the second and third year, which, to appearance, were hardly inferior to the first year's growth. "The effect," adds Mr. Tucker, "in favor of the cane was immense, and there is little doubt that it will soon be extensively spread throughout the district."

A subscription is in progress for rewards for the best agricultural productions of next year. The successful competitors for the Parent Society's medals are Messrs. Nicholson of Maharajgunge and Gilbert D'Rozario of Azimghur.

BOOKS FROM ENGLAND.

The receipt of two letters from Captain Grindlay furnishes the intelligence of the despatch of a small consignment of books for the use of the Society, which had been written for. Captain Grindlay desires that a selection of one of the parcels may be made and presented to the Society, in his name, as a sincere well-wisher to the prosperity of the Institution, and on all occasions Captain Grindlay states he shall give due attention to the wishes of the Society, and obtain such Proceedings and Reports of the home public bodies, as will be given in exchange for those of the Society. Captain Grindlay further states that he will lose no opportunity of giving publicity to the views and movements of the Agricultural Society of India, which he thinks is destined to assist in the birth of a new era for India.

STATE OF HORTICULTURE AT MORADABAD.

Major Sleeman in a long and interesting letter with which he has favored the Special Cotton Committee on the subject on which they were engaged, mentions incidentally that about thirty-five years ago Mr. Leycester introduced into his garden at Moradabad a Bombay graft, and that now Bombay mangoe trees are spread over the whole station, giving double value to estates in the estimation both of Natives and Europeans : and that nobler fruit is not to be found in the world, delicious and wholesome. Thousands of grafts are now ready, Major Sleeman adds, to be carried over the country , every garden has them for any one that will take them, and every gardener understands the art, and is spreading it. The apples and pears which have been introduced are utterly useless. The peach trees are also bad. In the city of Moradabad fine, very fine cauliflowers can be purchased at one pice a piece, four for an anna, and so on. The bazar is full of them ; so of turnips, radishes, &c. ; good carrots are rare.

BLACK PEPPER IN BENGAL.

An extract of a letter from Mr. Dearman, Deputy Collector at Dacca, was next submitted, in which that gentleman mentions that the black pepper grows not only in the Dacca district but in the adjoining district of Tipperah, and that he has himself met with it there in several villages, growing very luxuriantly and bearing plentifully. It is planted at the foot of betel and mangoe trees, and attaches itself to them in the same way as ivy does to trees at home.

APRIL 8, 1840 —GENERAL MEETING.

The Hon'ble Sir Edward Ryan, President, in the Chair.

(Twenty Members present.)

The Proceedings of the last General Meeting, were read and confirmed.

The gentlemen proposed at the March Meeting, were elected Members of the Society, viz.

Dr. Douzell, Messrs. F. S. Brown. Alex. S. Brown, C. E. Newcomen, F. R. Hampton, A. S Gladstone, and Thos. Hugon.

The names of the following gentlemen were read as candidates for election :

D. W. Fraser, Esq., of Gyah,—proposed by Major Carter, seconded by the Secretary.

Henry Moore, Esq., C. S.,—proposed by Dr. Strong, seconded by the Secretary.

Henry Pidcock, Esq., C. S.,—proposed by Mr. Thos. J. Turner, seconded by the Secretary.

Lieut. G. L. Cooper, (Commanding Artillery, Shah Soojah's Contingent,)—proposed by Dr. Spry, seconded by Dr. Strong.

John Elliot, Esq., (Firm of Livingston, Syers and Co.)—proposed by Mr. Hodgkinson, seconded by the Secretary.

A. Murnay, Esq.,—proposed by Mr. W. F. Fergusson, seconded by Dr. Spry.

R. Barnes, Esq., of Purneah,—proposed by Mr. H. Piddington, seconded by Mr. W. Byrne.

PRESENTATIONS TO THE SOCIETY.

Library.

A copy of the Proceedings of the Quarterly General Meeting of the Agricultural and Horticultural Society of Madras, held on the 15th January, 1840.—*Presented by the Madras Agricultural and Horticultural Society.*

Museum.

1. Seven large and fifteen small packets of grape seeds of sorts, fifteen large packets of musk-melon seed, four ditto water-melon, one ditto large istambol or *scented* melon, three ditto small istambol or miniature *scented* melon, three ditto

large pomegranate seeds, two ditto small shah-toot'h or royal mulberry, three ditto apple pips, one ditto pears, one ditto quince, and two ditto large pumpkin.

This handsome consignment of seeds has been received from Affghanistan from Colonel Stacy, who resides at present at Candahar. The flavour of the musk-melon is described by the donor as delicious, and so of the water melon. The istambol melon is not eaten but is carried in the hand to smell to, as this variety, especially the little istambol melon, is much esteemed for its lovely scent. The shah-toot'h, or royal mulberry, is nearly the size, and has all the flavour of the English kind

These seeds were freely distributed to the members present, and but few now remain for applicants.

2. A small bundle of flax prepared from the Rhœa plant (urtica nivea) of the Province of Assam.—*Presented by Captain Jenkins.*

The fibre is described by Captain Jenkins, as being in universal use for the manufacture of fishing nets and lines At present there is little trade in it, being only grown in such quantities as the fishermen require, and the present cost is ten rupees a maund; but as the plant can be grown with the least possible trouble, and the preparation of the flax from it is a very facile process, Captain Jenkins states, that there is no doubt, the flax can be grown at half this price. In texture, it is remarkably strong, and is very likely to make good linens.

3. A sample of the root of a plant which the natives use as "glue" and call "serais." The plant is not cultivated but grows wild in quantities near Candahar.—*Presented by Col. Stacy.*

Dr. Spry mentioned, that he had tried some experiments with this gelatinous root by boiling and macerating it in water, but he had been unable to extract any strong adhesive quality. Further trials would probably give other results.

4. Samples of tea from Assam consisting of "Young Hyson," "Toichu Peko," "Pouchong," "Hyson," "Chatear," "Souchong," "Big Gunpowder," "Hyson Skin," and "Little Gunpowder."—*Presented by the Secretary.*

The Honorable the President, on these samples being submitted, begged to mention to the Meeting the circumstance, that the Society was indebted for these samples to the Secretary, who had obtained them from the Assam Company as one of the shareholders; whereas the Society who had made an application for a supply two months ago, had not received a particle, although he understood that some was coming. He thought in future, whenever the Society had any application of the sort again to make, it had better go direct to Government, instead of applying indirectly through Committees

5. A large bale of acclimated Upland Georgia Cotton.—*Presented by Colonel Skinner.*

6. Three samples of indigenous cotton from Jalown in Bundlekund.—*Presented by Captain Showers.*

7. Specimens of two kinds of gum, one known by the people of the jungles as the Piāsāl or Bijessār, very much resembling the kino of the Butea frondosa, of a beautiful lake color, and the other the gum of the Bahera tree.

Lieutenant Kittoe, who presents these to the Society, states that the leaf of the tree whence the Piāsāl is obtained yields a yellow dye as well as the chips of the wood. The Bahera tree* yields an immense quantity of gum, which appears in quality to resemble the ordinary gum Senegal of commerce, and is largely partaken of by the Chooars and Coles as food. It could be collected, Lieutenant Kittoe states, in large quantities in the Midnapore forests. The Peear, another tree of these parts, yields a very hard adhesive gum of a clear white color, and there are several gigantic creepers that also yield gum. In the Passes there are many fine Saul timber trees, and the mountain Ash thrives well, and is much esteemed by the natives for banghies, bows, &c. &c. Ebony also is plentiful, and there is a powerfully aromatic grass resembling the famous grass oil of Mhow. The country (Upper Baumunghatti) would do well for any kind of cultivation.

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* Terminalia Bilirica, *Roxb.*—H. H. S.

8. A small bale of Egyptian Cotton brought from Alexandria.—*Presented by Colonel Frith.*

9. The plant and fibre of the "Moogah."—*Presented by Mr. D. W. H. Speed.*

The fibre is a good deal used by the Natives, and appeared on examination to be the Sanseviera Zeylanica of Roxburgh. Mr. Speed found that it was prepared from the leaves, which were gradually beat, either after or without soaking in water. On testing the strength of a single fibre, Mr. Speed found that the thicker bore seven ounces, while the fine broke at five ounces. The juice of the root of the plant is esteemed in fevers by the Hukeems.

10. Minute specimens of China Nankeen Cotton and Beerbhoom Brown Cotton.—*Presented by Mr. J. W. Laidlay.*

Mr. Laidlay in a recent visit to the Straits has been able to obtain some seeds direct from China of the Nankeen cotton plant, and is now engaged in experiments upon the usefulness of this variety of the plant in the climate of Bengal. The brown cotton of Beerbhoom, of which Mr. Laidlay furnishes the sample, is the indigenous sort that he is anxious to supersede.

11. Nine Brazil yams brought to India in the Ship *Allerton.*—*Presented by Mr. Bellairs.*

Mr. Bellairs has tasted a part of the supply, and finding them very superior to what Bengal furnishes, he thought they might be worth the acceptance of the Society.

Dr. Spry mentioned, that he had lost no time in forwarding a moiety of the supply to the Nursery, and distributing the remainder, where attention was likely to be paid to their cultivation.

12. Two Apricots (in spirits) grown at Barripore.—*Presented by Mr. R. S. Homfray.*

13. A bundle of fibre prepared from the plantain tree, and a small quantity of Hemp from the Aloe leaf.—*Presented by Mr. Michael Betts.*

In his note which accompanied his present, Mr. Betts states, that having been attracted by a remark in the London Price Current of the 2nd December last, from the respectable house of Messrs. Fry, Griffith and Co. that considerable supplies of a new sort of Hemp from the stalk of the *plantain tree* had realized from *6d.* to *8d.* per lb., he turned his attention to it and endeavoured to prepare the article; but the process he adopted was very slow, and he thought that it would not answer. Mr. Betts asks for any suggestions that the Society might be able to offer, and it was mentioned, that the mode of preparing the fibre in Manilla, as described in the 1st volume of the Transactions of the Society, might be recommended.

14. Apricot, cherry, melons, cabbage, clover (two sorts), almonds, cypress, quince, and China-aster seeds, from Affghanistan.—*Presented by Colonel Smyth.*

Colonel Smyth fears that few of these will grow in a Bengal climate, the rains being so heavy. Neemutch and Mhow are, he thinks, the finest climates for acclimating cold country plants in, and considers it a pity there is not a horticultural garden at these stations.

15. A log of oak, walnut, and cedar (deodar), from the Himalayas.—*Presented by Captain Caine.*

REPORT OF THE COMMITTEE ON AGRICULTURAL STATISTICS.

The returns which have been received from the different Medical Officers, who have been so good as to favor the Society with replies to its Circular on the subject of the prices of the chief agricultural products of the country, having been arranged by the Committee, the formula for the presentation to Government was submitted and along with it a map, in which the places, whence the returns have been sent, are marked, with the chief geological features of the main mountain ranges and the plains.

THE NEW BUILDING.

The Honorable the President took an opportunity of observing, that although he was not empowered to communicate explicitly the pleasure of Government, relative to the site for the intended new building, yet he believed he might safely announce that by the next Meeting, the information would be fully before the Society. It might be the cost of the building might exceed the estimate given. Should such be the case, it would not be right to appropriate any more of the fixed assets of the Society, and the more preferable plan would be to ask the assistance of members individually for a small contribution. While they were about it, it was in every respect desirable, that a handsome building should be reared, that should be an ornament to the city, and give ample accommodation to the institutions for which it was destined.

INFORMATION IN REPLY TO THE CIRCULAR REGARDING THE NATURAL PRODUCTIONS AND INTERCHANGE OF PLANTS.

A large collection of returns of a most valuable kind were laid on the table, bearing on the subject of the plants of the country, and such as could be introduced with prospective advantage to the welfare of the country. Among these were some highly valuable communications which had been received from Sir James Carnac, Bart., the present Governor of Bombay, who, on receiving the Circular of the Society, had been pleased to direct letters to be addressed to some of the leading botanists under his Government, and from whom the information now transmitted was received in reply.

The Hon'ble the President, in calling the attention of the Meeting to these documents, begged to recal to the notice of the Members, that in the month of June last year, a despatch had been received by the Society from the Supreme Government of India, in which the intentions of the Home Government to transmit seeds and plants for the purpose "of carrying on extensively, experiments for naturalizing in India useful and desirable plants indigenous in other countries," were communicated; that to give every support to so desirable a resolution, a Committee was appointed by the Society, and at its suggestion, a circular letter was addressed to many of the residents in the empire, asking them to furnish information regarding the productions of their part of the country, and what they deemed might be introduced with advantage. The replies now received were the result, and he begged to move that these papers should be referred to the Committee for its examination and report; which was accordingly done.

PROMOTION OF AGRICULTURE IN THE AZIMGHUR DISTRICT.

Three very interesting communications were read from Mr. Tucker, Officiating Collector of Azimghur, in which that gentleman draws the attention of the Society to the efforts he is making, by the offer of rewards, to promote the advancement of the agricultural resources of the District. Mr. Tucker, deeming it necessary to encourage artificial planting throughout his district, as being an object of great public interest and utility, in consequence of the jungles and groves being fast destroyed to furnish firewood to the sugar-boilers; has undertaken to offer, through the Azimghur Acbar, on his own account two rewards of 200 and 100 Rs. each, to any person who should make the most extensive plantations this year, of which the young trees should be well and healthy by the end of the hot season of 1841. Mr. Tucker would feel much gratified if the Agricultural Society would add gold and silver medals to these premiums. A schedule is also afforded by Mr. Tucker, as Secretary of the Branch Society, in which the handsome sum of one thousand rupees is assigned in various sums as prizes to exhibitors of the best agricultural and horticultural products, and a request is preferred for the grant of one gold and five silver medals from the Parent Society as a contribution. Mr. Tucker remarks, "that when the residents at a small station can raise upwards of 1000 rupees for the encouragement of agriculture, the Agricultural and Horticultural Society of British India cannot surely refuse the grant of six medals?" With reference to the annual grant of 50 rupees made by the Parent Society, Mr. Tucker mentions that he never contemplated using these funds after the Branch Society had once got over the first weakness of infancy. Having had frequent inquiries made of him by planters and others as to the cultivation and preparation of flax, which there is every reason to hope will become the staple production of his part of the country, Mr. Tucker intimates that he has drawn up a brief account of the best modes of operation. The weavers of the Azimghur district are anxious for the success of the experiment, and many of them have taken from Mr. Tucker, samples of linen cloth for imitation. Mr. Tucker proposes that the Society should print the memoranda and distribute them as a pamphlet.

The Hon'ble the President thought the Society was much indebted to the indefatigable exertions of Mr. Tucker in so ably assisting in the great work of improvement throughout his district, and every encouragement, consistent with the rules of the Society, should be afforded to him.

With regard to the allotment of medals, much conversation ensued, and it was at length determined that seven silver medals should be placed at the disposal of Mr. Tucker to distribute as he liked best; but that the Society only awarded gold medals to individuals in direct communication with the Society, and on very special occasions; it was therefore decided that this could not be given.

The notes on flax were referred to the Flax Committee.

SECOND HORTICULTURAL EXHIBITION AT BERHAMPORE.

The last communication presented was a report from the Secretary of the Berhampore Branch Society of the Exhibition held at Moorshedabad on the 20th ultimo.

Five English and five Native gentlemen were present, and three silver medals and seventy-two rupees were awarded as prizes to the native gardeners.

MAY 13, 1840.—GENERAL MEETING.

The Hon'ble Sir Edward Ryan, President, in the Chair.

(Twenty-five Members present.)

The proceedings of the last Meeting were read and confirmed.

The gentlemen proposed at the April Meeting were duly elected Members of the Society, viz.

Messrs. D. W. Fraser, Henry Moore, Henry Pidcock, John Elliot, A. Mornay, R. Barnes and Lieutenant G. L. Cooper.

The names of the following gentlemen were read as candidates for election :—

Baboo Roy Ramdhone Ghose, Deputy Collector of the 24-Pergunnahs,—proposed by Baboo Ramcomul Sen, seconded by Dr. Spry.

J. F. G. Cooke, Esq., Civil and Sessions Judge of Dacca,—proposed by Mr. W. F. Fergusson, seconded by Mr. Colin Campbell.

Major Douglas, Brigade Major, Queen's Troops, Fort William,—proposed by Dr. Spry, seconded by Dr. Strong.

John Tweedie, Esq., of Hazramore Indigo Factory, Jessore,—proposed by Mr. George Hill seconded by Dr. Spry.

Lieutenant Doolan, Assistant to the Political Agent in Bundlekund,—proposed by Colonel Dunlop, seconded by Dr. Spry.

Parke Pittar, Esq., Merchant,—proposed by Mr. G. F. Hodgkinson, seconded by Mr. Robert Campbell.

PRESENTATIONS TO THE SOCIETY.

Library.

1. Madras Journal of Literature and Science, (No. 25.)—*Presented by the Madras Literary Society.*

2. Contributions to the Botany of India by Dr. Wight.—*Purchased by the Society.*

3. Prodromus Floræ Peninsulæ Indiæ Orientalis, by Dr. Wight.—*Purchased by the Society.*

Museum.

1. Thirty-eight plants of the new species of Mulberry (Morus Multicaulis) lately brought to the notice of the Society by the Honorable the Court of Directors of the India Company. —*Presented by Mr. Balestier, American Consul at Singapore.*

Mr. Balestier, in his note announcing the despatch of this most valuable consignment of plants, intimates, that having observed from the proceedings of the Society, a desire to procure plants of the Manilla Mulberry (Morus Multicaulis or Morus Cucullata) he does himself the pleasure of sending a box containing 60 plants, taken from a tree in his possession, to mark his high respect for the laudable endeavours of the Society. The facts concerning the genuineness of the plants sent are stated by Mr. Balestier as follows :—Some four or five years since Mons. de Seneville, President of the French Courts at Pondicherry, while on his way to Java, gave the tree to Mr. Balestier, under the assurance that it was taken from a tree at Pondicherry, which had been sent out from France, where it had been received from Manilla. In every particular, Mr. Balestier says, the tree in his possession coincides with the botanical description given by the Agricultural and Horticultural Society of India in its proceedings, and he sincerely hopes the plants sent may prove acceptable.

Thirty-two of the plants are alive, in good order, and they were for the present made over to the Nursery.

2. Specimen of Flax grown at Monghyr.—*Presented by Mr. W. F. Fergusson.*

3. Specimen of Flax from Jessore.—*Presented by Mr. John Tweedie.*

4. Specimen of Manilla Hemp.—*Presented through Dr. Wallich by the Right Honorable the Governor of Ceylon.*

5. Specimens of Irish, Belgian and Russian Flax.—*Presented by Mr. G. F. Hodgkinson.*

6. Specimen of Indian Flax.—*Presented by Mr. Hodgkinson.*

7. Several samples of Indian acclimated Flax from Belgium and Russia, and English seed. Also Flax from the indigenous seed, some prepared under the supervision of Belgian Farmers.—*Presented by the Trustees of the London Flax Company.*

8. Specimen of fibre from the Yucca superba.—*Presented by Major Davidson.*

9. Specimen of common Ceylon Flax, a ball of string made from the fibre of the Aloe leaf, and a sample of the fibre itself grown in the Kornegalle district, Ceylon.—*Presented through Dr. Wallich, by the Right Honorable the Governor of the island.*

These specimens were directed to be made over for the report of the Flax Committee.

10. Six boxes of Assam Tea of a consignment lately received.—*Presented by the Government of India.*

Consisting of Young Hyson colored	20	Catties.
,, not colored....	Do.	Do.
Hyson skin ,, ...	Do.	Do.
Souchong................	25	Do.
Toichu Peko..............	20	Do.
Chatin..................	25	Do.

On the presentation of this Tea a discussion arose as to the propriety of returning the special thanks of the Society to the Supreme Government for the contribution; but as the transfer was considered to be made to the Society on public grounds such a procedure was not deemed necessary. The proposition therefore fell to the ground.

It was remarked by Dr. Wallich, that as yet no report had been made in this country on the qualities of the various samples of Assam Tea which had been received, and that the community of India were indebted to London brokers for what was known concerning the article. On the motion of Mr. C. K. Robison, seconded by Dr. Wallich, a Select Committee consisting of Messrs. G. W. Johnson, Robt. Compbell, Chas. Dearie and J. W. Cragg, was formed for the purpose of drawing up a report on the various samples received from Assam.

11. An apple and a large basket of peaches grown at Howrah.—*Presented by Mr. C. Hampton.*

The apple is obtained from a layer about two years old, cut from an old tree in Mr. Homfray's garden at Barripore. It is a dwarf kind, and espalier, and this is the first time of bearing. The beauty and size of the peaches attracted general admiration. The trees which bore them produce equally fine fruit every year and in great abundance. They are from Peach stones planted in Mr. Hampton's garden and not grafted. The roots of the trees are laid bare annually in the first week in November, and allowed to remain open five or six weeks. The trees are then pruned freely, and to the roots of each two baskets of well pulverized old manure which has been well exposed to the sun and air are applied, after which the roots are covered up.

After the fruit has been set Mr. Hampton commences watering the trees, taking care to increase the quantity of water as the weather becomes hotter and the fruit larger, till the amount furnished to each full grown tree, on every fourth day reaches to four kulsees. The soil in which they thrive is of a light sandy nature, rather sloping and higher than the neighbouring gardens. From it therefore the rain passes readily away, to which circumstance Mr. Hampton attributes the excellence of his fruit.

The seedlings of one year are, at the commencement of the ensuing rains, transplanted to the place appointed for their growth, bear fruit in small quantities the *third year*, and are in full perfection during the fourth. At the present time Mr. Hampton has two trees in full bearing which are only three years old.

12. A fruit obtained from the seeds lately received from Caubul marked "Musk Melon."—*Presented by Mr. R. W. Chew.*

The fruit appeared to partake more of the *gourd* variety, and two gentlemen who were present and who had been in Afghanistan said the fruit was nothing like the Musk Melon of Caubul.

13. A smaller one of the foregoing.—*Presented by Mr. Chew.*

14. The fruit of the Granadilla. The tree whence they were obtained produced 200.—*Presented by Major Wood.*

15. A sample of Busmuttie Rice from the Hills beyond Almorah—Rice or Dhan from Cashmere—Chahorrah Dhan from the Mountains within the Choohur Hills, a Pulse from Cashmere—and a variety of large bean.—*Presented by Conductor Dawe of the Delhi Canal Department.*

The above samples are described by Mr. Dawe to be all of the third year's produce at his place of residence (Dadoopore). The facts which he communicates regarding the beans are very interesting. He says that he found the plant running over the top of an immense tree in the Dhoon forest, and having planted some of the seed as a curiosity in his garden at Dadoopore, he found them produce a vast quantity of large pods which he has used at his table for the last three years, prepared in the following manner. The pods are opened and the beans taken out, this being done, a thin skin which lines the inside of the pod is removed, and it (the pod) is then cut up into small slips in the manner of small beans, and cooked as they are.

Mr. Dawe states, that he has always found them of a colour and tenderness superior to any other sort whatever in the Upper Provinces, and a great acquisition to the table.

16. Plantains dried by solar heat.—*Presented through Dr. Wallich on behalf of the Right Honorable the Governor of Ceylon.*

COMPETITION FOR THE SOCIETY'S PRIZES.

The 1st of May being the time fixed for closing the receipt of contributions for the various Prizes held out by the Society, the announcement was read of two competitors for the prize on the best work on the Horticulture of Bengal, and one for the prize on the Agriculture of Hindustan—two for Silk, one for Tobacco, and one for Sugar.

The Hon'ble the President took occasion to remark that with regard to the best means of arriving at a decision as to the merits of the literary productions, which were now submitted, he thought that the object could best be attained by appointing a Special Committee of Members whose knowledge of agriculture and gardening may be considered somewhat of a practical kind, and who would so far *impose* on themselves the task of looking minutely into the MSS. to admit of the Society arriving at a correct knowledge of the intrinsic worth of the respective volumes. The Meeting approved of this recommendation, and a Committee composed of Col. Dunlop, Dr. Wallich, Messrs. N. Alexander, Robison, Watson, Hodgkinson, and Piddington, was accordingly appointed.

The specimens of staple commodities were referred to the respective Committees.

THE TURNIP-FLY.

Dr. Spry next submitted a paper from the pen of Dr. Pearson at Darjeling on the Haltica-nigra-fusca, or Turnip-Fly, which he has been so good as to describe and forward to the Society. The paper was ordered to be forwarded to the printers for insertion in the forthcoming volume of the Transactions which are now all but ready.

DEATH OF DR. HELFER.

Dr. Spry submitted a letter which he had received from Monsieur des Granges at Mergui, conveying the formal announcement of the murder of Dr. Helfer one of the Members of the Society.

JUNE 10, 1840.—GENERAL MEETING.

The Hon'ble Sir Edward Ryan, President, in the Chair.

(Forty Members present.)

The proceedings of the last Meeting were read and confirmed.

The gentlemen proposed at the May Meeting were elected Members of the Society, viz.

Baboo Roy Ramdhone Ghose, Messrs. J. F. G. Cooke, John Tweedie, Parke Pittar, Major Douglas and Lieut. Doolan.

The names of the following gentlemen were read as candidates for election.

J. Colebrooke Sutherland, Esq., Secretary, Law Commission,—proposed by Mr. C. Huffnagle, seconded by Dr. Spry.

R. G. D. Betts, Esq., of Senorah Factory, viâ Barr,—proposed by Dr. O'Shaughnessy, seconded by Dr. Spry.

Lieutenant W. F. Nuthall, of the Arracan Local Battalion, —proposed by Dr. Spry, seconded by Dr. Strong.

R. Loughnan, Esq. of the Civil Service,—proposed by Mr. D. W. Fraser, seconded by Dr. Spry.

D. McLeod, Esq. M. D., Inspector General of Hospitals, Bengal Presidency,—proposed by Dr. Wallich, seconded by Dr. Drummond.

J. V. Thompson, Esq. F. L. S., Dy. Inspector General of Hospitals at Sydney,—proposed by Dr. Wallich, seconded by Dr. Drummond.

PRESENTATIONS TO THE SOCIETY.

Library.

1. Indian Hand-book of Gardening by Mr. G. T. Frederick Speed.—*Presented by the Author.*

2. Dixieme Rapport Annuel sur les travaux de la Societè d'Histoire Naturelle de L'ile Maurice.—*Presented by the Society.*

3. Donn's General System of Gardening and Botany, 4 vols. 4to., 1831-37.

Low's Practical Agriculture, 2nd edition.

Porter's Tropical Agriculturist.

Journal of the English Agricultural Society, parts 1 and 2, of vol. I.

Quarterly Journal of Agriculture, Nos. 45 and 46.

Annals of Natural History, Nos. 19 and 20.

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4. The Society's own Transactions, vol. VII. was laid on the table.

Museum.

1. A bag of Carolina Paddy, recently imported.—*Presented by Mr. Hodgkinson.*

Mr. Hodgkinson is desirous of introducing this superior kind of rice into Bengal as it realizes from 15 to 20 shillings the cwt. more than the finest Bengal sort; this difference in the price alone being treble the prime cost of the latter.

Of Carolina rice the consumption at home is limited in consequence of the duty of 15 shillings being nearly tantamount to a prohibition; whereas if a similar description could be exported from this country it would be admissible at a duty of one shilling per cwt.

The introduction moreover of a superior quality of grain into India, and its extended cultivation is of vital importance to the landed interest, who, if success attend the experiment, would reap an immediate and permanent benefit. The subject, Mr. Hodgkinson considers, is neither unworthy of the notice of Government nor of the enlightened portion of the mercantile community. Mr. Hodgkinson suggests that the Society should commission a supply from Europe.

Dr. Spry mentioned that as this was the season of the year for the sowing of rice in Bengal and Orissa he had lost no time in distributing portions of the Paddy in various directions.

2. A specimen of the celebrated Chunderie Cotton in the pod, as well as a specimen of the manufactured cloth, known as Mahmoodie Muslin.—*Presented by Dr. Irvine, Residency Surgeon at Gwalior.*

3. Samples of Cotton from a plant much prized by the Ryots and of a perennial growth.—*Presented by Mr. Sconce, Collector at Chittagong.*

Mr. Sconce mentions that he learnt some time back that it was not uncommon for Ryots, in different parts of the district, to have a few Cotton bushes growing about their houses for home consumption, and that these bushes lasted for years and became almost trees. The plant whence the Cotton now sent was procured is more than eight or nine inches *in diameter,* and high in proportion. As regards this Cotton, Mr. Sconce states that the natives have an idea the seed came originally from the *West*

This is a good Cotton—well picked and clean; but the staple is short.

4. Pieces of Bamboo which had been submitted to the process recommended by Mr. Kyan, for preserving wood from dry rot, white ants, &c.—*Presented by Dr. Drummond, Surgeon of the Governor General.*

Dr. Spry in bearing testimony to the great importance of the circumstance here brought to the notice of the Society in Dr. Drummond's communication*, described the simple plan adopted by Mr. Kyan in preparing the timbers for the navy and house-building. Common tanks about the length of the timbers to be used are made, and into them a given number of gallons of the solution of corrosive sublimate are thrown. The timber is then thrown in and kept under water for twelve days, by means of weights. During this time a decomposition, as explained by Dr. Birkbeck in a recent lecture in London, takes place, whereby a violent ebullition occurs, in consequence of the *bichloride* of mercury acting on the albumen of the wood and forming a protochlorite, disengaging one proportion of chlorine gas. The saving which it is calculated the British Government would have effected during the last war, had Kyan's method been known, amounts to £800,000 per annum.

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* For the communication see Article IX.

5. A small bag of cotton and a box of seeds, the produce of the plants from seed brought from Egypt.—*Presented by Lieut.-Col. Frith of the Artillery.*

Some of the plants have reached a height of eight or nine feet, and are producing abundantly. The Cotton is of a very superior quality.

9. A small sample of Cotton grown at Parmesdeah; also two small bottles of oil drawn from the sun-flower seed, grown in a garden there; and a pumpkin measuring 42½ inches in length.—*Presented by Mr. Quantin.*

The cotton and oil are both good.

7. A sample of refined sugar made into balls.—*Presented by Edward Sterling, Esq. Collector of Burdwan.*

The sugar forwarded by Mr. Sterling was prepared at a large commercial depot adjoining the town of Burdwan. In quality and appearance it is equal, in Mr. Sterling's opinion, to English loaf sugar. It costs from ten to twelve rupees a maund, and might be produced in large quantities were due encouragement held out, and the cost of carriage to the bank of the Hooghly lessened by means of a canal. Several valuable sugar factories might be erected in the district of Burdwan with immediate prospect of a profitable result; and the Mauritius sugar-cane and other varieties of fine canes might be cultivated to any extent. Mr. Sterling further adds, that the soil is favorable in most parts, and the people have long been used to the sugar-cane cultivation. The introduction of sugar mills on improved principles, at convenient spots, would greatly tend to give a stimulus to the cultivation.

8. Several samples of sun-dried plantains; melons from Afghanistan seed grown in Mr. Smith's garden at Seebpore; a new variety of plum; two seedling pomegranates from Col. Stacy's seed, and two China peaches.—*Presented by Mr. R. Chew of Calcutta.*

The plantains have been prepared by Mr. Chew since the notice taken of this fruit at the last Meeting of the Society, and in nearly all respects they appear to equal those forwarded from Ceylon. The melons, one particularly, were exceedingly good, and pronounced by a gentleman who has been at Cabul to be quite equal to the fruit of Afghanistan. The following is the mode pursued by Mr. Chew for the culture of these melons:—

"Mix two parts of old dung manure, one part sand and one part earth, and fill up a pit two feet deep with it; then take burnt wood ashes and earth, in the proportion of ¼ of the former to ¾ of the latter, and after steeping the melon seeds a night and day in clean water, sow two or three superficially in pits prepared as above directed. In three or four days the plants will appear, and the earth round them should from that time be kept loose, and care be taken that they are neither too much or too little watered. The site should be as exposed as possible, but the north and south banks of tanks produce the largest melons. I have succeeded in growing about 80 melons after the above manner. They will not grow in damp or nitrous ground."

Mr. Chew further adds;—"If it had not been for the crickets, which have nipped the tendrils as fast as they grew, I should have had a few hundred melons. Stale urine will kill caterpillars, green, blue, or black, *when young*; grown up ones or crickets have set me at defiance as yet, but it will be hard if I don't do for them yet. I shall try camphor water on my more valuable plants; the experiment may answer."

9. Two bunches of grapes, obtained from vines at Krishnaghur.—*Presented by Dr. Fuller, Civil Surgeon at Krishnaghur.*

Dr. Fuller sends these specimens in order to direct attention to the fact that grapes may be successfully cultivated at Krishnaghur.

10. A small basket of 25 superior potatoes just received from Hobart Town.—*Presented by D. W. Speed, Esq.*

11. A superb orchideous plant from the country south of Midnapore.—*Presented by Captain Kittoe.*

TRANSFER OF THE SUM OF 10,000 RUPEES FROM THE SOCIETY'S FUNDS FOR THE PURPOSES OF A NEW BUILDING.

The Hon'ble the President begged to claim precedence of the notice of motion which stood for discussion, in order to call the attention of the Meeting to the nature of the arrangement which had been made relative to the contemplated new building. The reply of the Right Hon'ble the Governor of Bengal had been received, and although the site in the S. E. corner of Tank Square, asked for, had not been granted for reasons which were assigned by his Lordship, yet the piece of ground on which the decayed building now used as a Sailor's Home stood, was placed at the disposal of the joint Institutions on whose behalf the application had been made. The letter from the Right Hon'ble the Governor conceding the grant was in the following terms :

To LONGUEVILLE CLARKE, Esq.

Secretary to the Joint Committee of the Agricultural and Horticultural Society of India, the Calcutta Public Library, the Subscribers to the Metcalfe Testimonial and the Subscribers to the Metcalfe Library Building Fund.

General Dept. SIR,—I am directed to acknowledge the receipt of your letter, dated the 14th February, soliciting on the part of the above mentioned Societies the grant of a piece of ground for the erection thereon of a suitable Building for the use of the Agricultural and Horticultural Society of India, and for the Calcutta Public Library. A Bust of Sir Charles Metcalfe to be placed in a conspicuous part of the edifice, towards the expenses of which the subscribers to the Metcalfe Testimonial and Metcalfe Library Building Fund are to contribute largely.

The Right Hon'ble the Governor is unable to comply with the application in your letter for a portion of the ground at the south-east corner of the enclosure of Tank Square, as he is of opinion that those spaces of the town which are appropriated to light and to ventilation, ought not to be given up for purposes of building,—but His Lordship is willing to make over to the official trustees and their successors, of the Societies represented by your Committee, the piece of ground at the south-west corner of Hare-Street, upon which there is at present standing a building rapidly falling into decay, which has been temporarily appropriated to the "Sailor's Home."

The only conditions which the Government desire to make in regard to this ground are as follows :

That the edifice to be erected shall be ornamental and substantial, and that on failure of its being maintained in repair the ground shall revert to the Government, or at least, that the building shall not without the consent of the Government be alienable to other purposes than those set forth in the present correspondence. The Society of the "Sailor's Home" has been requested to vacate the building so occupied, so as to allow of your Committee commencing your operations early in July.

I have, &c.
(Signed) G. A. BUSHBY,
Secy. to the Govt. of Bengal.

Fort William, May 27th, 1840.

At a former Meeting the sum of 10,000 rupees had been voted out of the funds of the Society, and what now remained to be done was to transfer the money to the Union Bank for the purposes for which it was designed. The Hon'ble the President said that he should therefore propose—"That the sum set apart for the purposes of the contemplated building be transferred to the Union Bank to be lodged in the names of Messrs. Parker, W. P. Grant, Longueville Clarke and Dr. Spry, who are a Finance Committee appointed by the Special Building Committee for distributing the Joint Funds, and to be by them applied for the purposes of the "Metcalfe Hall," which was the designation, that the Special Building Committee had resolved should be given to the structure."

This proposition was duly seconded by Dr. Wallich, put, and carried unanimously.

In connection with this subject, the President said there was another circumstance which he wished to mention. The plan as originally designed was drafted under the supposition that the site in the Tank-square might have been granted.

The altered locality entailed the necessity of modifying the plan and forming fresh estimates. The estimate as now given amounted to 48,000, to meet which the joint subscriptions did not exceed 43,000 ; and he should therefore recommend that assistance should be asked by way of subscription from the Members, all of whom, whether residing in the interior or in town, he felt assured would feel equally interested in seeing a building erected for the purposes of the Society. The proposition met with approbation, and, on passing a paper round the table the sum of 1714 rupees was subscribed for at once.

DISPOSAL OF MOTION.

The motion of which notice was given at last Meeting by Dr. Wallich, viz. " That the Society's gold medal be presented to — Morris, Esq. for his success in preparing in Ceylon the very interesting sample of sun-dried Plantains now before the Society, an article which may become of great benefit to this country generally," next underwent discussion, and on being put to the vote was negatived.

PROGRESS OF HORTICULTURE AT SECUNDRA.

Mr. Hamilton, the Commissioner of the Agra Division, communicates to the Society an interesting account in original from Mr. Kaine, the Superintendent, of the progress making in horticultural matters at the Public Garden at Secundra. While at Secundra Mr. Hamilton mentions, that the Governor General expressed himself much gratified, and ordered the works to be extended, which has been done.

Mr. Kaine enters into a detail of the result attending the sowing of various kinds of seeds forwarded by the Society to the Secundra Garden. Mr. Kaine wishes that the Society should know that the Establishment at Secundra is working out the objects first contemplated by its founders as an Indian Penitentiary in a most satisfactory manner. The agricultural products last year embraced all the kinds of grain usually grown in Upper India, and at the desire of the Governor General the horticultural department has been extended to the whole remaining portion of the garden.

DACCA AND ASSAM: THE WOOD-STRAWBERRY, SCOTCH FIRS, RATTOON CANES.

A letter from Mr. Dearman, Deputy Collector at Dacca, was next read. During his tour in the month of March last, through the Bickrampore pergunnah, Mr. Dearman mentions that he found the common Wood-strawberry growing abundantly. The fruit was about the size of a hazel-nut. The natives of the place called it chilgotah, and say it is not often to be found. Mr. Dearman says, that he never met with it in the plains before, nor was it known to the Dacca residents. Last October twelve months Mr. Dearman walked from Panduah at the foot of the Cossiah Hills to Gowhatty, and from Nuclow, one of the intermediate stations, he brought away four seedling Firs (Scotch,) two of them were planted in the Dacca Public Garden. One was destroyed, but the other is now a very handsome plant, more than three feet high, full ot branches, and a stem 1½ inches in circumference. The growth of the Fir has been most extraordinary—the plant being only four inches high when removed from its native bed. As ornamental trees Mr. Dearman states they are far more grateful to the sight than the Casuarinas or South American kinds so common in Bengal. Mr. Dearman has lately seen in the Rajnagore Pergunnah several fields of last season's sugar-cane preserved for a rattoon crop. He was not aware that such a practice was ever adopted in India, but the people informed him they do occasionally cut a second crop from the same root. 1400 canes of the Otaheite sort have been distributed from the Branch Society's Garden at Dacca, and 2000 plants were ready for field planting, besides two begahs in the garden.

PRIZE FOR FLAX.

Mr. Preston desired to call the attention of the Meeting to the circumstance that no prize was at present offered by the Society for the best sample of Flax, and he therefore, desired to give notice of the following motion for discussion at the next Meeting:

" Proposed by Mr. Preston and seconded by Mr. Piddington,—that the Gold Medal of the Society be offered for the best sample of ten tons of Flax, the produce of any District under the Presidency of Bengal and the North Western Provinces."

" The terms and conditions to be left to the Flax Committee."

JULY 8, 1840.—GENERAL MEETING.

The Hon'ble Sir Edward Ryan, President, in the Chair.

(Twenty-four Members present.)

The gentlemen proposed at the last Meeting were elected Members of the Society, viz.—

Messrs. J. C. C. Sutherland, R. G. D. Betts, and R. Loughnan; Drs. D. McLeod, and J. V. Thompson, and Lieutenant W. F. Nuthall.

The names of the following gentlemen were read as candidates for election :—

Daniel Ainslie, Esq.,—proposed by Mr. James Church, seconded by Dr. Spry.

Alfred Oram, Esq. of Hanskallie Factory, Krishnaghur,—proposed by Dr. Wallich, seconded by Dr. Spry.

Captain Wm. Broadfoot, Shah Soojah's Service,—proposed by Dr. Spry, seconded by Dr. Wallich.

Cowr Kaleekishen,—proposed by Dr. Spry, seconded by Major Douglas.

Baboo Rajbullub Seal,—proposed by Mr. Hodgkinson, seconded by Mr. Dearie.

H. Woollaston, Esq.,—proposed by Mr. Hodgkinson, seconded by Mr. Dearie.

PRESENTATIONS TO THE SOCIETY.

Library,

1. Two copies of the Fourth Annual Report of the Committee of the London East India and China Association.—*Presented by the Association.*

2. Journal of the Royal Asiatic Society of Great Britain and Ireland (No. 10.)—*Presented by the Society.*

3. The Cotton Trade of India, its past and present condition, in two parts, by Major Genl. Briggs, F. R. S., &c. &c.—*Presented by the Author.*

4. A copy of the Proceedings of the Quarterly Meeting of the Agricultural and Horticultural Society of Madras, held on the 8th April, 1840.—*Presented by the Society.*

5. A Manual of Gardening for Western India, by Dr. R. Riddell.—*Presented by the Author.*

6. System of Mechanical Philosophy, by Dr. Robison, with notes by Sir David Brewster, 4 volumes, royal 8vo.—*Presented by C. K. Robison, Esq. V. P.*

7. Flora de Filipinas, by Fra Manuel Blanco.—*Presented by Mr. Leighton.*

The Secretary in submitting this presentation to the Society stated, that he had been authorised by Mr. Leighton to mention that he should be happy to make a translation of the work for the use of the Society and give it the MS. The Meeting in return expressed itself highly indebted to Mr. Leighton for this liberal offer, and the Secretary was directed to place himself in communication with him on the subject.

Museum.

1. Three samples of Cotton from foreign seed, grown at Allahabad.—*Presented by R. Montgomery, Esq.* [Referred to the Cotton Committee for Report.]

In his letter announcing the despatch of the above samples, Mr. Montgomery mentions, that the Madras Tobacco Seed received last year from the Society has flourished admirably, and that he has saved about three seers of the seed for distribution in the proper season; that the Indian Corn obtained from the same quarter has given equally good results, and the produce has been sold in the bazar at the rate of *four heads* for one pice, whilst *sixteen* and *seventeen heads* of the country produce is sold for one pice. Mr. Montgomery mentions further his intention of distributing English vegetable seeds in the neighbourhood, and of giving prizes for the best samples of each kind of vegetable raised from such seed.

2. Sample pods of Cotton, the produce of Bourbon Seed, grown in a garden belonging to the Rev. Mr. Wilkinson, in the Gorruckpore District.—*Presented by Dr. Wallich on behalf of Capt. Thos. Goldney.*

The opinion of the Cotton Committee to which this Cotton was referred is, that "it is very inferior in point of staple to the generality of acclimatized Bourbon Cotton."

3. Three specimens of the Red Bhuttee Wheat in ear, of the finest, medium and inferior quality.—*Presented by Lieut. E. I. Robinson, Superintendent of the Bhuttee States.*

Pronounced to be a good quality Wheat.

4. A small assortment of Grains and Vegetable Seeds from the south of Europe.—*Presented by Professor Royle on behalf of the Court of Directors of the India Company, who caused the package to be transmitted by the Overland Mail. The Secretary stated that he had transmitted the greater part of them to Mr. Smith at Delhi, and to the Secundra Garden.*

5. Samples of Salep Misrie in a green and prepared state; of Chiroonjee, prepared and in berry; a root of what is called by the Natives Jungle Chillie; another root known by the name of Bis Cobra, a sample of Cotton of the first description grown in Berar; specimen of Gum Lac, found on an old Barr Tree, and three pieces of the branch with the insect attached thereon.—*Presented by Dr. R. Riddell, of the Nizam's Service.*

Dr. Riddell, in his interesting communication, states that the root of the Jungle Chillie and Bis Cobra is considered by the Natives as an antidote to the bite of all venomous snakes, and is invariably used in such cases. Several instances are mentioned by Dr. Riddell, on the testimony of others, of success having attended the application of these roots to the part affected. Dr. Riddell suspects that the Bis Cobra is a species of Hog-weed, and the Jungle Chillie a variety of Bryony.

With reference to the specimen of Gum, Dr. Riddell informs the Society, that the Barr tree, whence it was taken has not been cut for two seasons, neither has it borne fruit lately; it was grown from a Bengal seed, and is of the large sort; the tree being pruned the Gum Lac was found upon several branches, and with a glass of no great magnifying power, Dr. Riddell could see clearly very minute white insects moving all over the red gummy appearance, and apparently at work. Should the specimen be considered of any worth, Dr. Riddell intends directing his attention more particularly to the culture of the insect.

The Gum was pronounced to be of the light orange sort, used chiefly to make Shell Lac, and was worth at present in the market not more than 4 to 4-8 rupees a maund.

6. Four boxes containing specimens of various sorts of Raisins prepared under his inspection from Grapes the produce of the country.—*Presented by Dr. R. Riddell.*

The Raisins here presented were prepared from three varieties of Grape :—

The Saibœ, a white grape, which sells generally at two seers for the rupee, and is consequently too expensive to be converted into raisins, except as an experiment.

The Fukeric, a very luscious water-grape, sells from twelve to twenty seers the rupee.

The Bokirie is still more plentiful and is extensively cultivated, as from its cheapness the grape is consumed by the poorer classes. Sixty seers is the quantity that may be obtained for a rupee.

The plan pursued by Dr. Riddell in the preparation of these Grapes, was simply to get them in as ripe a state as possible, and expose them occasionally to the sun on mats, turning them as necessary ; they were dry in ten or twelve days. One box contains Raisins prepared from the Bokirie Grape after the method laid down in Grey's Pharmacopeia. Dr. Riddell does not think he has been so successful with this latter as with the Grapes treated in a more simple manner, but wishes to obtain information on this point from the Society, being anxious, now that he has quitted that part of the country, (Kunnur) to induce the natives to whom he has taken the trouble of pointing out the mode of preparing the Grape, to carry on the experiments, as it is probable if properly attended to, that this staple may become a much greater article of commerce, than it is at present.

7. A specimen of Bikaneer Sugar.—*Presented by Lieut. E. I. Robinson.*

Lieutenant Robinson states that his object in sending this specimen to the Society is, to learn if such Sugar is likely to obtain a sale in Calcutta, at a probable cost of one rupee four annas per seer. In the Upper Provinces, Lieut. Robinson, mentions it is much sought after more as a luxury than for common use. The reason of its being so dear is because the Sugar in its raw state has first to be carried from the Doab to Bikaneer.

This is a beautiful sample of Sugar-Candy, but the price was thought to be a bar to its profitable introduction into the Calcutta market.

8. Specimens of Azimghur Cheenee and Shukkur.—*Presented by H. C. Tucker, Esq., on behalf of the cultivator.*

The Cheenee was pronounced to be a very superior Sugar and worth in the Calcutta market 11-8 *to* 12 *rupees a bazar maund —the Shukkur about* 8 *or* 9 *rupees a bazar maund.*

9. A small quantity of superior Potatoes just received from Van Dieman's Land.—*Presented by Geo. Hodgkinson, Esq.*

10. A canister of Arrow-root grown and manufactured under his superintendence at Garden Reach.—*Presented by Mr. Wittinbaker.*

11. Specimens of Hemp, of Cloth made from the Fibre and a small quantity of the seed.—*Presented by Captain H. Kirke.*

These specimens were grown by Captain Kirke at Deyrah Dhoon, and were pronounced by a good judge of the article to be of a most superior quality, and almost equal in staple to the Russian Hemp.

12. A small assortment of Fruit, Vegetable and Flower seeds, specimens of Candahar and Bokhara Churrus, of Kelaut Opium, of Candahar Spear-mint, dried and pounded, and the leaves, flowers and seeds of the "Poorzeh"—*Presented by Lt. Col. Stacy.*

Amongst other observations made by Col. Stacy in his highly interesting communications regarding the properties of most of these presentations, he mentions, that the leaves of the "Poorzeh" have a highly aromatic smell, they are dried and used by the natives as tinder, the matchlock-men always carry this and a bit of flint and a steel, it ignites as readily as any tinder. Of the three sorts of Candahar Churrus, the first is described as being almost a resin; this may be smoked or taken inwardly without any fear of after consequences: it is considered in the opinion of an old Churrus-smoker as unequalled. The second is also very good, but not equal to No. 1; no fears of injury from this variety, if used in moderation. The third kind is common, it dries up the brains, burns the bowels and brings on a disease of the lungs. The Bhokara Churrus is stated to be very strong, whoever smokes it becomes intoxicated immediately; it is perfectly maddening, produces great heat of body, diseased lungs, and kills in a short time; this is the kind used by murderers.

With regard to vegetables, Col. Stacy states that the white mustard has been used in Garrison, simply pounded, and that in the absence of English prepared mustard it was found a very good substitute. The coss lettuce is the largest Col. Stacy has ever beheld, one is more than sufficient for a meal. Col. Stacy intimates that he is preparing a good assortment of fruit seeds for the Society, and intends sending it at the close of the rainy season.

The special thanks of the Society were directed to be offered to Col. Stacy for his valuable communications and presents.

13. Sample of the "West India Strawberry Guava."—*Presented by Mr. D. W. H. Speed.*

The trees from whence this fruit is obtained, was grown by Mr. Speed from seed received from the late Mr. John Palmer in 1835, they are now in full bearing, and the fruit is stated to make a very delicate flavoured jelly.

14. Melon seeds grown in Calcutta from Caubool, Candahar and Cawnpore seeds.—*Presented by Mr. R. W. Chew.*

15. Specimens of Box-wood from the Sirmoor Mountains. —*Presented by Dr. Wallich on behalf of Capt. N. Vicary.*

Capt. Vicary states, that the Box-tree flourishes most luxuriantly in the Sirmoor Mountains, attains a height of 30 to 40 feet, and would furnish length of logs of 6 to 10 feet by a foot and more in diameter. Professor O'Shaughnessy is of opinion that the wood is admirably suited for those purposes to which the Mediterranean Box, and that wood only, has hitherto been applied.

16. A small specimen of Raw Sugar, prepared from Otaheite Cane grown at a Factory opposite Hooghly.—*Presented by James Colquhoun, Esq.*

17. Specimen of Sun-dried Plantains from Jayporc, Assam. —*Presented by Dr. Wallich on behalf of Mrs. Brownlow.*

In a note to Dr. Wallich forwarding these Plantains, Mrs. Brownlow mentions her intention of devoting her time to the preparation of this fruit for sale in India, or exportation at four annas per lb.

In bringing these excellent specimens to the notice of the Meeting, Dr. Wallich took the opportunity to state that the fruit had arrived in an exceedingly dry state, although it had had to travel so great a distance at such an unfavorable season of the year ; this could be accounted for from the circumstance of the specimens having been packed up in India-rubber cloth, which had completely resisted the moisture of the atmosphere.

18. An assortment of seeds from Norfolk Island, and a specimen of the Fern-tree from New Zealand.—*Presented by Lieut White, H. M. 44th.*

19. Five Beans, the produce of a stock that had been obtained in South America from the hand of a Mummy.—*Presented by Lieut. White. The Secretary informed the Meeting that Lieut. White, to whom he was indebted for this very remarkable curiosity, had mentioned to him that he obtained these beans from a gentleman at Sydney, who had brought them from Lima, where they had been raised by him from seed found in the grasp of some Mummies which had of late been found in the Province of Peru.*

20. Two specimens of Manilla cloth manufactured from Pine Apple fibre.—*Exhibited by Edward Stirling, Esq. These specimens of workmanship were justly extolled for the beauty of their execution.*

PRIZE FOR FLAX.

The motion of which notice was given at the last Meeting by Mr. Preston for the grant of the gold medal of the Society for the best sample of Flax of not less than ten tons in quantity, was, after an amendment had first been put to have the quantity reduced, carried, and the compilation of the details left to the Flax Committee.

REPORT ON LITERARY WORKS.

The first Report submitted to the Meeting was that of the Special Committee appointed to decide on the merits of the several works that had been put in competition for the prizes of the Society.

Two complete works had been received and one incomplete one. The Committee did not consider the two first works of the description which the Society contemplated when offering its prizes, the latter was deemed deserving of the support which was asked for it, but a letter having subsequently been received wherein the author expressed a wish to withdraw the document, the Society immediately acceded to the application.

REPORT OF SPECIAL COMMITTEE ON THE INFORMATION OBTAINED IN SUPPORT OF THE VIEWS OF THE COURT OF DIRECTORS AND THE SUPREME GOVERNMENT OF INDIA WITH REGARD TO AN INTERCHANGE OF PLANTS, &c.

Your Committee, in continuation of its report which will be found recorded in the Proceedings of the Society for the month of September last, desires to report, that, in accordance with the wishes of the Society, it has caused an extensive distribution of the Circular, inviting information, to be made not only throughout the Presidencies of Bengal and Agra, but to those also of Bombay and Madras, and that your Committee has now the pleasing duty of announcing the receipt of materials, in return to its call, of a most extensive and valuable kind; those from the Hon'ble the Governor of Bombay, through whose powerful instrumentality the Botanical Officers under his Government have contributed, especially so.

Your Committee would now beg to state, that in its opinion, these valuable papers should be made over to the Government of India as a contribution from the Society to be disposed of as may seem fit,—remarking at the same time, that as the Hon'ble Court, in a subsequent despatch, a copy of which the Society has also been favored with, from the Supreme Government, expresses a desire that steps should be taken in this country for giving publicity to all useful information at the expense of the State*, that these papers should be recommended to the careful consideration of the Right Hon'ble the Governor General of India in Council, as being worthy of being digested and arranged for the Press, a task however, which, your Committee would remark, will require some considerable labour.

Your Committee having been formed at the spontaneous instigation of the Society, and not from any expressed wish for assistance made by the Government, who transferred the Despatch to the Society,—it can only venture to suggest the mode of procedure as the one best calculated for giving efficiency to the objects which the Society has in view when desiring to co-operate with the Government in carrying out the work of improvement: for the Committee does not consider it right to recommend that the expense of preparation and publication should be paid out of the funds of the Society.

The papers referred to consist of fourteen communications comprised under three forms of classification, viz.

1st.—Food, comprising esculent grains of all kinds, medicinal plants, fruits and roots.

2nd.—Fodder and food for cattle and domestic animals, comprising grasses, seeds, fruits, roots, and leaves; also ornamental shrubs and flowers.

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* EXTRACT.—"We propose from time to time, to print and publish such information as may come before us, calculated either to extend the knowledge of the productions of India, to increase their amount, improve their quality, or give a stimulus to the demand for them; and we desire that you will cause similar measures to be taken for effecting the same objects throughout India."—Despatch to Governor General in Council, dated 24th July, 1839.

3rd.—Manufacturing and commercial articles, such as oils, gums, dye-woods, and barks and other vegetable staples of commerce.

The amount, in manuscript, of this information extends to 148 pages, but when digested and brought into proper form would probably not exceed one hundred, if so much.

(Signed) N. WALLICH, M. D., V. P.
,, G. W. JOHNSON.
,, JOHN COWIE.
,, ROBERT WATSON.
,, C. K. ROBISON, V. P.
,, HY. PIDDINGTON.
,, D. W. H. SPEED.
,, RAMCOMUL SEN.

The Hon'ble the President, in allusion to the Report which had just been read, thought the subject deserving of the attention of the Government, and he coincided in opinion with what the Committee stated, that valuable as the papers seemed to be, the Society could not well be expected to pay the expense of publication out of its own funds, setting aside the consideration of the time and trouble which the arrangement and superintendence of the MSS. for the press would entail, and which could not be expected should be exacted as an act of gratuitous labor. In transmitting the report to Government, which he should propose should be done along with the several communications alluded to, in order that the Government might see the real nature of the documents, he would suggest that if the Government were willing to incur the expense of preparation and publication of these practical papers, that the Society would be the best Superintendent for the work, especially as other papers, from time to time, might be deemed deserving of publication in fulfilment of the intentions of the Home Government. He therefore begged to move the following resolution :

" That the Report of the Committee now read be confirmed —that a copy of the same with the documents to which it referred, be transmitted to the Secretary to Government in the General Department by the Secretary of the Society, recommending the same to the favorable consideration of the Right Honorable the Governor General in Council, and a suggestion, (if the Government should think it desirable,) that the same should be printed, and that sanction be given to the Society to incur the expense which may be required for the compilation of the papers for the Press and the printing thereof."

This motion was seconded by Dr. Wallich and carried unanimously.

PORT ESSINGTON.

A letter from Mr. Earl from Port Essington to Dr. Spry on the new settlement of Port Essington, and giving cover to a circular of "Hints" drawn up for the use of travellers in visiting the islands of the Eastern Archipelago by Dr. Thompson, Deputy Inspector of Hospitals at Sydney, was next read. Mr. Earl, who accompanied Sir G. Bremer in the *Alligator* to Port Essington, describes the little settlement as not yet open for colonization, but for some months orders to that effect have been expected from home. The climate has proved admirable. Although within the tropics, there has been neither sickness nor death among the garrison, who are as healthy as when they left England, indeed the climate, though warmer, is equal to that of New South Wales. The soil is also better than that of any part of Australia that Mr. Earl has yet visited. There is not a spot on the whole Cobourg Peninsula, that is not capable of cultivation, while at the same time it is easily cleared. The gardens are luxuriant in the extreme.

AUGUST 12, 1840.—GENERAL MEETING.

The Hon'ble Sir Edward Ryan, President, in the Chair.

(Twenty-eight Members and one Visitor present.)

The gentlemen proposed at the July Meeting were elected Members of the Society, viz.—

Messrs. Daniel Ainslie, Alfred Oram, and H. Woollaston, Captain W. Broadfoot, Cowr Kaleekishen Roy and Baboo Rajbullub Seal.

The names of the following gentlemen were submitted as candidates for election :—

Captain L Hone, 57th Regt. N I.—proposed by Major Carter, seconded by Dr. Spry.

Lieutenant R. Mathison, 6th Regt. N. I.—proposed by Mr John Allan, seconded by Dr. Spry.

E. T. Trevor, Esq. Civil Service,—proposed by Dr. Wise, seconded by Dr. Spry.

Major E. D'Arcy Todd, Acting British Resident at Herat, —proposed by Dr. Spry, seconded by Mr. John Allan.

Captain F. N. Reid, 6th Regiment Madras N. I.—proposed by Dr. Spry, seconded by Dr. Wallich.

Captain H. M. Lawrence, Political Agent at Ferozepore,—proposed by Mr. W. F. Gibbon, seconded by Dr. Spry.

Baboo Cossinaut Dutt,—proposed by Dr. Spry, seconded by Mr. Hodgkinson.

Henry P. Sturgis, Esq. American Consul at Manilla,—proposed by Mr. Charles Huffnagle, seconded by Major H. C. M. Cox.

Edward Lee Warner, Esq. Judge of the Nizamut Adawlut, —proposed by Dr. Spry, seconded by Dr. Strong.

Edward Currie, Esq. Secretary to the Sudder Board of Revenue,—proposed by Dr. Spry, seconded by Dr. Strong.

S. Mornay, Esq.—proposed by Mr. A. Mornay, seconded by Mr W. F. Gibbon.

PRESENTATIONS TO THE SOCIETY.

Library.

1 Transactions of the Medico-Botanical Society of London Part 4 of volume 1.—*Presented by the Society.*

2. Madras Journal of Literature and Science, (No. 26.) —*Presented by the Madras Literary Society.*

3. A Pamphlet on increasing the Depth of Soils. By Cuthbert Wm. Johnson, Esq.

4 Six copies of a Pamphlet containing Observations on the Employment of Salt in Agriculture and Horticulture, with directions for its application, founded on practice. By Cuthbert William Johnson, Esq.

The seven foregoing brochures were presented by G. W. Johnson, Esq. on behalf of his brother the author

Museum.

1. Eleven bottles of Sandoway Tobacco seed, and a sample of Sandoway Tobacco.—*Presented by Lieut. Thos. Latter.*

2. Two bottles of Sandoway Tobacco seed,—samples of Black Pepper from Sandoway and Ramree,—of Hemp from Ramree and Akyab,—a small quantity of Sandoway Flax seed, —and two samples of Cotton Blankets made in the Hills, North of Akyab.—*Presented by Captain Bogle, Commissioner at Arracan.*

Capt. Bogle states that the Black Pepper does not appear to be indigenous to the Province, although it is found growing almost in a wild state, and he thinks it might be cultivated to a considerable extent. The plant is found on the sites of deserted gardens, entwined around the stems of tall trees and growing without the least attention being paid to it. The Natives adopt the plan of boiling their pepper to preserve it from insects, and the specimen forwarded by Captain Bogle, has been so treated. Captain Bogle sends the specimen of hemp and cloth in consequence of the highly favorable opinion that had been pronounced on a former sample.

3. A box containing ten Potatoes grown at Darjeling from Madras seed, received from Mr. H. M. Low.—*Presented by Dr. Pearson.*

Dr. Pearson mentions that the Potatoes now submitted to the Society far exceed their progenitors in size and goodness; the seed was sown at the latter end of March in ground twice manured, and three times well dug over.

The Potatoes were much admired, and Dr. Pearson's polite offer to furnish a further quantity for seed, gladly accepted.

4. A box of Apples from Nepaul.—*Presented by B. H. Hodgson, Esq., Resident at the Court of Katmandhoo.*

5. A small assortment of English flower seeds.—*Presented by Professor Royle, on behalf of the Court of Directors of the India Company, who caused the package to be transmitted by the Overland Mail.*

The packet arrived in excellent order. Dr. Royle acknowledges the receipt of the Affghanistan seeds that had been forwarded to him by the Secretary, and promises a further despatch of English seeds for the approaching cold weather season.

6. A maund of Flax seed produced in Bengal, from English seed.—*Presented by the Trustees of the London Flax Company.*

7. A small quantity of Cotton seed produced at Hidgelee from Seychelles seed, and a minute sample of Cotton of the second year's growth, grown at Hidgelee from Seychelles seed.—*Presented by Dr. Alexander Smith, Civil Surgeon.*

Dr. Smith mentions that the Natives at Hidgelee are now very anxious to get foreign Cotton seed, having observed how much more productive and better the staple is than that obtained from indigenous varieties.

8. Specimens of Egyptain, Sea Island and Upland Georgia Cotton, raised at Delhi from acclimated seed of the fourth generation, a sample of Nankeen Cotton, also raised at Delhi from acclimated seed of the third generation—and specimens of Egyptian, Sea Island, and Nankeen Cotton, raised in 1839, at Deyrah Dhoon.—*Presented by G. H. Smith, Esq., Collector at Delhi.*

Mr. Smith mentions that the specimens of Cotton from the Dhoon, have been produced from a portion of the same seed which produced those raised at Delhi,—and he is anxious to learn whether they are considered superior or inferior to the other samples. The whole was referred to the Cotton Committee for report.

9. Samples of Huzarah Wheat.—*Presented by ditto.*

10. A specimen of the Bread Fruit of the Andamans and Nicobars, *(Pandanus Mellori)* brought from the Maldives by Captain Denny of the brig *Nine.*—*Presented by John Allan, Esq.*

11. Cobs of Maize, each containing from 608 to 720 grains of corn grown at Allipore.—*Presented by D. W. H. Speed, Esq.*

12. Four samples of undried and one of dried Sugar, manufactured from native cane goor at Seebpore Factory belonging to Messrs Fergusson and Co.—*Presented by A. Mornay, Esq. on behalf of Messrs. Fergusson and Co.*

These samples were justly esteemed for the excellence of their grain and quality generally.

13. Specimens of asparagus bean (Dolichos asparagus, Pid.) from seeds received by the Society from the seedsmen at Paris.—*Presented by H. Piddington, Esq.*

NOTICE OF MOTIONS.

No. 1. Proposed by Mr. Piddington, seconded by Baboo Ramcomul Sen,—"That a gold or silver Medal (as the Society may determine) be awarded to Messrs. Vilmorin and Andrieux of Paris, for having sent us the valuable Asparagus Bean (Dolichos Asparagus) which is now become a bazar vegetable."

No. 2. Proposed by Mr. Charles Dearie, seconded by Dr. Wallich,—"That premiums be offered for the following treatises on some of the Staple Products of India :—

1.

"For the best treatise from practical experience in India, on the most approved mode of cultivating Sugar Cane—Co.'s Rs. 750.

2.

"For the best treatise from practical experience in India, on the most approved mode of Manufacturing Sugar, with tables shewing the comparative cost of cane and date tree produce—Co.'s Rs. 750.

3.

"For the best treatise from practical experience in India, on the manufacture of Rum—with tables showing cost of production of London proof—Co.'s Rs. 500.

4.

"For the best treatise from practical experience in India, on the most approved mode of cultivating, and manufacturing Tobacco, more especially with reference to the home markets—Co.'s Rs. 500.

5

"For the best treatise from practical experience in India, on the most approved mode of producing Flax, more especially with reference to the home markets—Co.'s Rs. 500.

6.

"For the best treatise from practical experience in India, on the most approved mode of producing Raw Silk—Co.'s Rs. 750."

7.

"For the best treatise from practical experience in India, on the most approved mode of producing Linseed, more especially with reference to the home markets—Co.'s Rs. 500."

"The above amounts for premiums are merely suggested, leaving them to be modified by the Committee to be appointed as they may deem proper."

Conditions.

1st. "The Society reserves to itself the right of refusing to grant any of the annexed premiums, if the works on the respective subjects are not approved of by a Committee to be appointed for reporting upon them."

2nd. "The Society shall have the option of publishing all or any of the said works with the Society's Transactions for circulation amongst its members."

REPORT OF THE SILK COMMITTEE.

The first report submitted, was from the Silk Committe on samples of Raw Silk, which had been submitted for th medals of the Society.

Two competitors had come forward, and the Committe after alluding to the sitting of a former day on the subject c their samples, states, that it is obliged to decline recommending the award in either case, as in one instance the specime appeared, on the showing of the competitor, to be an isolate sample and not the average of a larger or a large merchantabl quantity; and that on his shewing of the cost, it was foun acknowledgedly incomplete, inasmuch as he stated that it di not contain several items of charge which would necessaril attend an entire expenditure in the preparation of a large merchantable quantity.

In the case of the other gentleman he was, by the decision above given, left by the disqualification, a solitary candidate for the prize, and being without a competitor, and the Committee without the means of making, (under a "legitimate comparison") any comparative examination, there remained no ground in the opinion of the Committee on which it could, within the meaning of the General Rules of the Society, proceed to an examination and award;—but independently of this difficulty or objection, the Committee observed also, that in this case it was not positively stated or shown that the specimen was an average one of a larger or a large merchantable quantity produced by the competitor, however much the tenor of his letter in some other respects might inferentially lead to such a supposition.

The Committee observed, that the thanks of the Society are due to both the gentlemen for their detailed information, and especially to one of them for the very interesting manner, in which he has explained the merits of his manufacture.

REPORT FROM THE NURSERY.

The Garden Committee desire to state, that owing to the irregularity of the usual course of the last cold season, the cane nursery was deprived of rain at the early planting—and that the rattoons in consequence were equally deprived of water except by artificial irrigation. The result has been that the crop is not so forward nor so prolific as it was last year, and the time of distribution cannot be declared positively. At the next month's Meeting the Committee propose to determine finally on the subject.

The Committee desire to notice the favorable appearance of some plants of the Manilla hemp tree, (the Abaca or Musa Textilis) and also the state of the Nopalerie, the Guinea-grass field, the black bean cultivation, the mulberry (Morus Multicaulis) and other few fruit tree plants in the nursery of the Society.

INFORMATION SOLICITED REGARDING ASSAM TEA.

The receipt by the Supreme Government of recent intelligence from the authorities in England regarding the Assam Tea sent from Calcutta, having been incidentally alluded to, the proposition was made by Mr. Leach, and seconded by Mr. Gibbon, that an application be made to Government requesting that the Society might be obligingly furnished with any report that may have been received by it on the Teas of Assam sent home in the *Margaret*. The same was agreed to unanimously.

PUBLICATION OF INFORMATION REGARDING THE SPREAD OF USEFUL PLANTS.

The Secretary submitted a reply from the Supreme Government to the letter which had been addressed by him on transmitting the recommendation of the Society to have the papers on the spread of useful plants prepared and printed at the expense of Government.

To H. H. Spry, Esq. M. D.
Secy. Agricultural and Horticultural Society of India.

Genl. Dept. Sir,—I have the honor to acknowledge the receipt from you, upon the part of the Agricultural and Horticultural Society of India, of valuable papers upon "the spread of useful plants in India," with the copy of a

Resolution by which a request is conveyed "that sanction be given to the Society to incur the expense which may be required for the compilation of the papers for the press and the printing thereof."—I am directed by the Governor-General in Council to express his thanks to the Society for the communication of these papers, which though they embrace a less wide range than might be desired, are most valuable, and in some instances do very great credit to their writers, from the well-directed zeal and spirit of observation which they display. His Lordship in Council readily sanctions the expense which will be necessary for the publication of such portions of them as the Society may think useful, and would only suggest that the proof sheets be submitted to Dr. Wallich and to Dr. O'Shaughnessy, and if time could be allowed also to Dr. Falconer, so that any commentary which may occur to those gentlemen, in illustration of the progress made within the last few years in the interchange of the vegetable productions of India with other countries, and more particularly in the improvement and better application within India itself of its own productions, may be added.

I have the honor to be, Sir, your most obedient Servant,

G A. BUSHBY,

Secy. to the Govt. of India.

Council Chamber, the 22*nd July*, 1840.

In order to facilitate the wishes of Government as suggested in the above letter, it was thought the three gentlemen whose names are referred to could best fulfil the pleasure of the Government in affording their own illustrations by joining with the Secretary in a Committee, and this arrangement was finally decided on.

INTELLIGENCE REGARDING THE AMERICAN COTTON PLANTERS.

Dr. Spry stated that he had the pleasure to announce to the meeting the receipt of a letter from Dr. Royle, dated India House, 4th June, who writes to announce the intelligence of the arrival of ten American Cotton Planters in England, four of whom are destined for Bengal, three for Madras, and three for Bombay. The Madras and Bombay gentlemen were to sail the following day (June 5th), while those for Bengal were to start overland on the 20th of the month, at all events two of them.

Dr Royle further mentions that he has been getting some information respecting the difference of soil and climate, musters of Cotton cultivated, and the various specimens which have been received from India—altogether about 40 or 50 different specimens.

Dr. Royle states that the Planters are much inclined to prefer the Indian Cotton to any other, and think that it is susceptible of great and easily effected improvement. They do not care a great deal about soil; at least they say that they will grow Cotton in any soil, if it is deep enough for the plant to take good hold of the ground. After which, that is when it is 2 or 3 feet high, they think the plant quite manageable and may be made to produce anything. They pick the seed, that is, they first select the best plants and the *best seeds* of these plants, and sow none but what are approved of. They also change their seed and import it from Mexico, where the Planters say, the best seeds are produced, and they consider the Georgian Upland short staple and New Orleans Cotton to be a native of Mexico. The plants are kept widely separated even as much as eight feet. They plough and hoe between the plants regularly so as to keep down weeds, and make the plant short with lateral branches by topping. The gathering and cleaning they consider the most difficult work which slaves in the Southern Provinces of America have to perform.

Dr. Royle also mentions that they are bringing to India with them large quantities of seed of all kinds for the three Presidencies. Also very light ploughs and saw-gins which they say never injure the staple. A good mechanist was expected from America in the *British Queen* when the letter came away. Dr. Royle writes that all the planters seem to prefer the Northern Provinces. 30 deg. of latitude they seem to think essential; but Dr. Royle says he has tried to undeceive them in this respect, and read them the accounts of the culture in Guzerat, Surat, Dharwar, and Tinnivelly, Ganjam and Vizagapatam, in Dr. Wight's excellent paper on the subject. Moisture is decidedly objected to, the climate and soil cannot be too dry after the plant has once taken hold. A little lime is advantageous. The suggestions made by the Agricultural and Horticultural Society, as to the way in which they should be employed, Dr. Royle states, they thought very judicious. A few Honduras Cotton seeds came in the letter; they had been presented to Dr. Royle by the Hon'ble Fox Strangway.

MEMORANDUM ON THE DHOBA SUGAR WORKS, AND PROPOSITION OF THE GRANT OF A GOLD MEDAL TO MR. BLAKE.

The Secretary next submitted a memorandum, which Major Sleeman had been so good as to forward to the Society, which had been made by him on the 27th December, 1837, after a visit to the Dhoba Sugar works, which he requests may be submitted to the President and Members.

Major Sleeman mentions in his letter which accompanies the memorandum in question, that he has been told that the Society had not considered itself called upon to confer any special mark of its approbation on his exertions, on the ground that Mr. Blake did not grow his own cane. But the introduction of the manufacture upon such a scale as that pursued at Dhoba tends, Major Sleeman considers, to extend and to improve the cultivation of the cane, by opening distant markets to the produce, and by locating among the people those who can show them the advantage of growing none but the best cane to which their soil and clime are adapted, and provide them with a ready demand for all of this kind that they can produce.

In this light Major Sleeman feels assured the President and Members of the Society will consider Mr. Blake as a great public benefactor, and excuse his taking the liberty to bring his claims to their particular consideration. It is only by the skill and enterprise of Europeans, by which capital is concentrated in great works and expensive machinery, that we can ever hope to open the markets of the world to the Sugars of India; and as Mr. Blake was the first to venture his fortune, and he ventured his all in the undertaking, Major Sleeman hopes that he may be considered to have merited some special mark of the Society's approbation.

Mr. Baron in the District of Shahjehanpore, in the same manner as Mr. Blake in Burdwan, is extending and improving the cultivation of the cane, and is a public benefactor to the people around him; but Major Sleeman says he has not seen his works, and he has mentioned Mr. Blake as having been the first to show what could be done, at the hazard of all he had or could hope to have in the world.

The proposition stands for discussion at the next Meeting.

COTTON AND MAIZE CULTIVATION IN THE DELHI PROVINCE.

A long and interesting communication* was next brought forward which had been transmitted by Mr. Smith, Collector at Delhi, on the subject of the cultivation of Maize and foreign Cotton in India.

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* For this communication see article 23.

In addition to the valuable testimony of the correctness of the views taken by the Society in the formation of its Report, which this practical communication of Mr. Smith's affords, a letter from Dr. John Campbell, Resident at Cawnpore, to Dr. Spry, was next submitted.

Dr. Campbell writes—" Your Cotton report was admirable, and this was not only my opinion, but that of every unprejudiced practical man that I consulted. But with regard to extending the cultivation of foreign Cottons, or improving our own indigenous ones, or introducing the cultivation of Hemp into these provinces, nothing will be done till Government gives up lands, or lightly assesses lands to commence the experiment on. The bounty system *must* be acted on here, to give your views and hopes a fair trial. The prejudices, the poverty of the Zemindars about this will not allow them to enter on any untried cultivation, and to such as I have spoken on the subject, their reply is, 'If this is to be such a good thing, why does not Government take it up? Does the Sircar not grow Opium? and what good has the Opium done *us*? They can just pay their revenue, and hardly support themselves besides, by following the path of their fathers. Any failure in the success of these experiments, (which the servants of Government are doing all to persuade them to undertake,) and their Zemindaries may be put up for sale to satisfy the claims of that very Government, which deceived them into uncertain speculations.

It is no excuse to say that the native has himself to blame, for failure *must* occur only from want of that attention that is paid to Cotton and Hemp cultivation in the Western world. "Government knows its native subjects, and ought to change their natures before exciting their extravagant hopes."

On the same subject also Mr. McLeod, in charge of the Jubbulpore District, writes to Dr. Spry expressive of his delight that Jubbulpore has been selected by the Cotton Committee as one of the posts where one of the American Planters is to be stationed. Mr. McLeod desires to state how anxious he is to receive some further particulars as to the time at which the establishment will be set to work, and the measures which should be taken in anticipation. Mr. McLeod states that he has got in readiness about thirty beegahs of Cotton land, and hopes to obtain from Saugur, in time for the sowing, a supply of the various kinds of acclimated seeds.

SEPTEMBER 9, 1840.—GENERAL MEETING.

The Hon'ble Sir Edward Ryan, President, in the Chair.

(Thirty-two Members present.)

The gentlemen proposed at the August Meeting were elected Members of the Society, viz.—

Captain L. Hone, Lieutenant R. Mathison, Major D'Arcy Todd, Captain F. N. Reid, Captain H. M. Lawrence, Baboo Cossinauth Dutt, Messrs. E. T. Trevor, H. P. Sturgis, E. Lee Warner, Edward Currie and S. Mornay.

The names of the following gentlemen were submitted as candidates for election:

Henry Graham, Esq. of Khalboalya Factory, Kishnaghur, —proposed by Mr. E. S. Hodges, seconded by Dr. Spry.

H. Stainforth, Esq. Judge of Sylhet,—proposed by Major Carter, seconded by Dr. Spry.

Edward Barwell, Esq., Barrister,—proposed by Dr. Spry, seconded by Mr. James Colquhoun.

Henry Mackenzie, Esq., of Midnapore,—proposed by Mr. W. F. Gibbon, seconded by Dr. Spry.

Hugh Colquhoun, Esq., (Firm of Boyd and Co.)—proposed by Major Garstin, seconded by Dr. Spry.

J. W. H. Campbell, Esq., C. S.,—proposed by Dr Strong, seconded by Dr. Spry.

A. G. Clunes, Esq., Indigo Planter, Jessore,—proposed by Mr. N. Mackenzie, seconded by Dr. Spry.

M. C. Ommaney, Esq., Assistant to the Governor General's Agent, Nerbudda Territories,—proposed by Dr. Spry, seconded by Dr. Wallich.

Captain G. H. Edwardes, A. D. C.,—proposed by Dr. Strong, seconded by Dr. Spry.

D. C. Mackey, Esq , (Firm of J. Mackey and Co.)—proposed by Mr. Willis, seconded by Dr. Spry.

J. F. Leith, Esq , Barrister,—proposed by Sir E. Ryan, seconded by Dr. Spry.

John Grant, Esq., Apothecary General,—proposed by Sir E. Ryan, seconded by Dr. Spry.

P. O'Hanlon, Esq.,—proposed by Mr. Robison, seconded by Dr. Wallich.

H. Sill, Esq., Medical Service,—proposed by Dr Wallich, seconded by Dr. Spry.

PRESENTATIONS TO THE SOCIETY.

Museum.

1. Specimen of Oven-dried Plantains from Dacca.—*Presented by Dr. Geo. Lamb. These plantains although discolored in appearance were particularly sweet and palatable, and reached Calcutta in good order.*

2. Sample of Hemp grown and manufactured in Bengal after the manner pursued in Belgium.—*Presented by Mr. H. Woollaston, on behalf of Mr. G. Deneef, Belgian Farmer.*

In his letter to the Secretary, accompanying this specimen, Mr. Deneef mentions that he considers it fully equal to the Russian and Manilla Hemp, which sell in the English market at the rate of 22 to £27 a ton; the manufacture is very simple, not requiring any instruments; so simple indeed that the article is prepared in Belgium by old men and children. Mr. Deneef adds that very little preparation of the soil in this country is requisite, and that the plant does not occupy the ground more than eighty days. From a cultivation of a little less than four beegahs, Mr. Deneef expects to obtain about 1000 lbs. of fibre, which it is his intention to transmit to the Flax Experimental Company for a report on its value;—on receiving this information he will forward to the Agricultural Society a detailed Report on the mode of culture, &c. of this rising staple.

3. Specimen of Undressed Flax grown in the district of Monghyr.—*Presented by the Hon'ble the President of the Society on behalf of Mr. Wallace.*

The Hon'ble the President stated, when submitting this specimen to the Meeting, that it was a sample of a large consignment that was coming from the Monghyr district, where the experiment of growing flax on a large scale had been undertaken by a practical flax-grower, and that he was particularly desirous of obtaining the sentiments of the Flax Committee on the quality of the fibre. He already had the strength ascertained by Professor O'Shaughnessy at the Medical College, and the result showed the following comparison;

Monghyr, ...	40,000
Archangel, ...	43,000
Baltic, dressed, ...	42,033
Do., undressed, ...	19,075
Irish, dressed,........	17,075

The specimen was made over to the Committee accordingly.

4. Two cases of Nopal plants loaded with *grana fina* cochineal insects.—*Presented by M. Bedier at Bourbon.*

The cases which were only opened a few minutes before the Meeting assembled, attracted great attention, as the plants were in apparent excellent order, and many of the insects seemingly alive and well. The whole were ordered to be transferred without loss of time to the Nopalerie at the Nursery.

PRIZE FOR A NEW VEGETABLE.

The motion of which notice was given at last Meeting by Mr. Piddington, to the effect that the gold or silver medal should be awarded to Messrs. Vilmorinn and Andrieux for having sent to the Society the valuable asparagus bean, was met by a counter-motion from Dr. Wallich, seconded by Mr. Robison, and carried—That the best thanks of the Society be given to Mr. Piddington for his exertions in introducing this valuable vegetable into the Bazar.

PRIZES FOR A TREATISE ON SOME OF THE CHIEF STAPLE ARTICLES OF INDIAN COMMERCE.

Previous to the Society entering on the discussion of the motion made at the last Meeting by Mr. Dearie, for the appropriation of sums of money, for the best treatises, founded on practical knowledge, on different articles of Indian Commerce, the Secretary submitted a note from Mr. Dearie intimating his inability to be at the Meeting, but hoping that the importance of the propositions which he had submitted would meet with encouragement from the Society, and that the spirit of the motion would be preserved.

Before entering on the merits of the question, however, the Hon'ble the President of the Society stated, that the Society at present was not in a condition to entertain the important subject brought forward by Mr. Dearie, as the Society had not the money in hand requisite to meet the call should the propositions be carried. Dr. Wallich, as the seconder of Mr. Dearie's motion, begged therefore to intimate that, after what had fallen from the President, he desired to withdraw the motion.

AWARD OF A GOLD MEDAL TO MR. BLAKE.

The Secretary next called the attention of the Meeting to the proposition which had been made by Major Sleeman, to award the gold medal of the Society, to Mr. Charles Blake, at Dhoba, for his exertions in advancing the Sugar manufacture of India, and intimated that he had, in accordance with the wish expressed at the last Meeting, submitted the paper to the Sugar Committee, who were favorably disposed towards the grant.

The question then underwent discussion, but on being put to the vote was lost.

DISTRIBUTION OF SUGAR-CANES.

The Nursery Report was next brought up and read. In it the Committee say, that taking into consideration the inclemency of the weather during the past fortnight, whereby many Canes have been destroyed, coupled with the previous disadvantages which the crop has sustained from the causes intimated in the minute of last month, the Committee does not consider that more than 10,000, perhaps not more than 9,000 Canes can be made available for distribution during the month of October next,—at which period the Committee will be enabled to state what further quantity will be fit for the purposes of the Society.

Adverting to the limited quantity of Cane for the supply of the present year—and the result of the arrangement of last, with reference to the means for recovering the expenditure which the maintenance of the Nursery entails, the Committee would desire to suggest that for the present year a new arrangement should be made, and that a small charge of one anna for each cane should be exacted, which charge is to include the expense of straw bands for securing the cane in bundles.

RENEWAL OF APPLICATION FOR REMISSION OF DISCRIMINATING DUTY ON INDIAN TOBACCO AND RUM.

Mr. Fergusson desired to call the attention of the Meeting to a proposition which he wished to submit relative to the continuation of the discriminating duties on East Indian Tobacco and Rum. Having referred to the resolution of the Society passed on the 8th of May, 1839, he again begged permission to be allowed to bring the subject to the notice of the Society, it being one of vast importance to the interests of India; since its continuance tended considerably to retard the progress of the Sugar culture and the welfare of the country generally.

The resolution was then read and seconded by the Hon'ble the President and carried unanimously: the Secretary being at the same time instructed to transmit the communication direct to the Hon'ble the Court of Directors and to the Board of Control for the Affairs of India, with a duplicate to the Supreme Government of India, and the expression of a hope that the subject would meet with the support of the Right Hon'ble the Governor General in Council.

Resolution.—That with reference to the Proceedings of the 8th May, 1839, when it was resolved that the Society should address the Court of Directors and the Board of Control, on the subject of equalizing the duties on East India Rum and Tobacco with that received from other British Possessions, but which application has not been successful;—the application be repeated by the present overland despatch, particularly with reference to Rum, the production of which, simultaneously with that of Sugar, has greatly increased, inasmuch as in no previous year have more than 26,000 tons of Sugar been exported from India to England, whilst in the present year the export will exceed 40,000 tons,—and if the production is further encouraged by the equalization of duties on Rum, there is little doubt that it will be further much augmented, so as to furnish a larger portion of the supply required for the consumption of Great Britain on moderate terms, it being evident that the facility of disposing of the Rum, whilst it increases the advantages derived from cultivating the Cane, tends to diminish the cost of the Sugar.

The following is the letter which has accompanied the resolution:

To G. A. Bushby, Esq.

Secy. to the Govt. of Bengal, General Department.

Sir,—I have the honor to inform you that at a Meeting of the Agricultural and Horticultural Society of India, held this day, the growing importance of promoting the cultivation of free labour Sugar in the Territories of British Asia, occupied much the attention of the Society, and the great necessity of relieving the country of the discriminating duties now exacted on East India Rum and Tobacco, again adverted to;—and, in reference to the receipt through the Governor of Bengal of the Hon'ble Court's despatch in the Financial Department, No. 22 of 1839, acknowledging the receipt of the representation made by the Society on the 8th of May, 1839, for the relief of India from this additional impost on its produce,—the accompanying resolution was again unanimously carried, with an instruction, that as this is the 9th of the month, and the latest safe day advertized by the Post-master General is the 13th current, that the communication now to be forwarded be made direct to the Hon'ble Court of Directors of the East India Company, also to the Board of Control for the Affairs of India,—and that a duplicate be transmitted at the same time to the Right Hon'ble the Governor General in Council, through the Secretary to Government in the General Department, for his Lordship in Council's information,—and the Society trusts that His Lordship in Council will do whatever may be practicable to give weight to this representation.

I have, &c.

(Signed) HENRY H. SPRY, M. D., *Secy.*

Calcutta, September 9th, 1840.

AMERICAN COTTON PLANTERS.

The Secretary next submitted extracts from two letters which he had received by the Overland—one from General Briggs, and the other from Captain Grindlay.

The former gentleman alluding to his pamphlet on Cotton writes—" You will perceive that I have separated the subject into two parts—the Indigenous and the Western plant. They require different soils and climates, and they even require different manipulation in clearing the staple from the seed. Whenever your Americans arrive, they should be sent up at once to the *North West Provinces* of Bengal, and they should never attempt to grow the Western Cottons on the soil formed from the debris of the trap formations, as is all the well known Cotton soil of India. The Sawgin will probably answer very well for the New Orleans and Upland Georgia Cottons, but it tears the finer Cottons, whether Sea-Island, Pernambuco, Bourbon, or Indian, to pieces. With these kinds the rollers, whether simple or complex, will be found the best clearers. When the Americans have succeeded in teaching the natives how to gather the Cottons, the latter should be sent to other districts to teach other natives and so on This is a point of great consequence. All these points are dwelt upon in my pamphlet in detail. The settlement of the ceded and conquered Territories will now open a fair field for the growth of Cotton, Linseed and Flax, and I look with great expectations for the result of a measure which I so long ago pointed out as the only means of doing justice to the landholder and to mother earth herself."

Captain Grindlay writes under date 4th July: "As to the American Cotton Planters, Captain Bayles has brought over ten; three are gone to Madras, three to Bombay, and four accompany him through Egypt next month, taking in the mean time important lessons at Manchester and Liverpool, and *en passant* in Egypt."

ARRACAN HEMP, AND ASSAM RHEA HEMP.

A report by Mr. Hodgkinson on the specimens of Hemp which had been forwarded by Captain Bogle, the Commissioner of Arracan, was next read. Mr. Hodgkinson states that the Hemp, if prepared properly, would suit the home market well and be much preferred, to either our "Sunn" or "Jute."

Of the specimen of Rhea Hemp sent from Assam, by Capt. Jenkins, Mr. Hodgkinson states, that it is a superior description and would answer admirably for cordage, nets, coarse and perhaps fine cloths, and were it more carefully prepared and softer to the feel, would in his opinion become an article of large export. Even in its present state, Mr. Hodgkinson considers it far superior in strength and fibre to either "Pat" or "Sunn." Mr. Hodgkinson states that he would be glad of a ton or two of this article for shipment to England.

PROGRESS OF THE FOREIGN COTTON AND SUGAR-CANE CULTIVATION AT SAUGOR.

Mr. Ommaney, in charge of the Saugor District, in a note to Dr. Spry, mentions that "the Georgian Cotton plants in the grounds at Saugor from the acclimated seed are beautiful." Mr. Ommaney promises a report on the Cotton plantations there and will transmit the produce to the Society. Mr. Ommaney also states that he has magnificent Sugar Cane in the garden from plants obtained from *Baitool*, in the Nerbudda Territories, one of the finest Sugar Cane tracts in India.

CUTTACK BRANCH HORTICULTURAL SOCIETY.

The Secretary next submitted two interesting letters which he had received from Capt. Reid at Cuttack, intimating the revival of the Cuttack Branch Society, which for some time, owing to the departure of the former residents, had necessarily fallen into neglect. Capt. Reid states that a respectable list of donations and monthly subscriptions have been obtained, and that a new site has been chosen for the garden which has been enclosed and made ready for cultivation.

Dr. Spry stated that he had rendered all the assistance at his disposal by despatching seeds of all kinds to Capt. Reid.

MODE OF GROWING CAROLINA RICE.

The last paper submitted was one by Mr. Pratt on the best mode of sowing Carolina Paddy.

Mr. Pratt is of opinion that the soils best calculated for Carolina Paddy are those of a rich clayey and alluvial kind. In the experiments made of growing this Rice in Purneah the method ordinarily observed by the Native cultivators was followed,—three or four plants were stuck in the soil at a span distance from each other, and to insure the most favorable result, there should not be less than from four to six inches of water on the field, either from rain or irrigation at the time of sowing.

Mr. Pratt states, that this plan differs from that observed in the Carolinas, according to Captain Basil Hall, the water is not allowed to remain on the field many days at a time However this may be, Mr. Pratt remarks, with reference to temperature between the two countries as well as from his own practical observation, he thinks it essential to the full development of the plant, that the fields should *always* remain inundated to a sufficient depth—varying according to the height of the Paddy, which runs up to about four or five feet.

PROROGATION TILL NOVEMBER.

The Hon'ble the President intimated that as the Native holidays interfered with the sitting of October, that he thought in future no Meeting should take place during that month; which

NOVEMBER 11, 1840.—GENERAL MEETING.

The Hon'ble Sir Edward Ryan, President, in the Chair.

(Twenty-five Members present.)

The gentlemen proposed at the September Meeting were elected Members of the Society.

Messrs. Henry Graham, H. Stainforth, Henry Mackenzie Hugh Colquhoun, J. W. H. Campbell, A. G. Clunes

M. C. Ommaney, D. C. Mackey, J. F. Leith, P. O'Hanlon, H. Sill, Dr. John Grant and Captain G. H. Edwardes.

The names of the following gentlemen were submitted as candidates for election :

Wm. Dunlop, Esq., (Firm of Bathgate and Co.)—proposed by Mr. Charles Huffnagle, seconded by Dr. Spry.

Lieutenant W. H. Delamaine, Artillery,—proposed by Lieutenant F. C. Burnett, seconded by the Secretary.

Captain T. D. Carpenter, Benares,—proposed by Mr. A. S. Gladstone, seconded by the Secretary.

J. B. Dickson, Esq., Civil Surgeon at Gya,—proposed by the Secretary, seconded by Mr. D. W. Fraser.

George Reid, Esq., of Buromasia Factory, via Surdah,—proposed by Mr. J. W. Laidlay, seconded by the Secretary.

J. H. Young, Esq., Deputy Secretary to Government,—proposed by Sir Edward Ryan, seconded by the Secretary.

John Dunbar, Esq., Judge of Burdwan,—proposed by Dr. Spry, seconded by Dr. Wallich.

Baboo Umes Chundra Roy, Zemindar,—proposed by Mr. J. C. Sutherland, seconded by the Secretary.

Lieutenant Charles Hogge, Artillery,—proposed by Lieutenant Burnett, seconded by the Secretary.

R. S. Brodie, Esq., of Bagoonburree Factory, Mymunsing, —proposed by Mr. W. R. Logan, seconded by the Secretary.

Edward E. Woodcock, Esq., Magistrate of Burdwan,—proposed by Dr. Strong, seconded by the Secretary.

Edward Lisle Ryder, Esq. (Firm of Turner, Stopford and Co.)—proposed by Mr. A. Beattie, seconded by the Secretary.

Mr. B. W. Lazarus, Merchant,—proposed by Mr. Edward Whyte, seconded by the Secretary.

W. P. Lewis, Esq. of Penang,—proposed by Mr. T. H. Maddock, seconded by Dr. Wallich.

H. C. Hamilton, Esq. C. S., Gya,—proposed by Mr. Daniel Ainslie, seconded by the Secretary

Mr. John Gray, (Firm of Burns and Co.),—proposed by Mr. Robison, seconded by Dr. Wallich.

PRESENTATIONS TO THE SOCIETY.

Library.

1.—Journal of the Royal Asiatic Society, (No. 11).—*Presented by the Society.*

2.—Transactions of the Society of Arts, (vol. 52, part 2nd) and several copies of Pamphlets on Jungle Silk, Bengal Silk and Tea from Assam.—*Presented by the Society.*

3.—The Green-House, by Charles McIntosh.

4.—The Orchard, by Charles McIntosh.

} *Purchased by the Society.*

Garden.

1.—Two boxes containing Sugar-cane packed in sand and two packages in straw.

These Canes were brought by the *Charles Jones* from Sydney, having been taken to that port by H. M. Sloop *Favorite*, on which vessel they were received from the Island of Otaheite on the 22nd May last.

In the letter of advice, Captain Dunlop, the acting Commander of the *Favorite*, intimates, that Mr. George Pritchard the British Consul at Tahiti, had stated that the Society may at any time command his services in obtaining further supplies of Cane from the Island.

The Secretary informed the Members that these Canes had been transferred to the Nursery without delay, and read a note from Dr. Wallich, stating that most of the pieces packed in sand had arrived in good order, but that all the Canes bound with straw had perished.

2.—Two baskets containing Potatoes reared at the Public Garden at Darjeling from Madras seed.—*Presented by Mr. Wm. Bruce on behalf of the Darjeling Experimental Garden Society.*

The seed from whence these Potatoes were reared, was put in the ground in May, and the produce taken up at the beginning of September. They were much admired by the Meeting for their size and general appearance.

Museum.

1.—Sample of Yam.—*Presented by Mr. D. W. H. Speed.*

Mr. Speed mentions that this Yam was produced in his garden from a sample of Brazilian Yam presented to the Society by Mr. Bellairs in April last. The bulb whence the sample submitted to the Society was taken weighed 5lbs., and consisted of 27 offsets. Mr. Speed states that the Yam is beautifully white, exceedingly mealy, and far superior to any Potatoe or anything of the same species he has met with in this country.

2.—Seed of the Shah Toot, or Royal Mulberry of Candahar. —*Presented by Lieutenant Colonel Stacy.*

Colonel Stacy describes the fruit of this species of Mulberry to be as fine and as well-flavored as any he has ever tasted in England.

3.—A plant (an Erythrina) reared from Nepaul seed.—*Presented by Mr. R. Chew.*

4.—A Hill Foura or Spade and two bits of Fir from Cherra Poonjee.—*Presented by Major Carter.*

Major Carter submits the Foura which cost three annas, to the Society with a view of shewing the members how good the iron is—10 to 1500 tons of iron could be procured during the year at several of the localities, the price of crude iron is about a rupee per maund.

The Fir contains a great quantity of resin, and Major Carter thinks that it might be extracted with profit.

5.—Specimen of Gum procured from a shrub called "Hurra."—*Presented by Lieut. Kittoe.*

Lieut. Kittoe states that this gum can be obtained in tolerable quantities, it oozes out of the extremities of the branches in May, about the time the new buds begin to appear ; the natives use this highly aromatic gum as a medicine.

6.—A sample of Sugar manufactured from the molasses of Sugar which had formerly been sent for competition.—*Presented by Mr. Edward Riley of Amherst.*

7.—Specimen of Pine Apple Fibre.—*Presented by Mr. Riley.*

8.—Sample of Jute.—*Presented by Messrs. Cockerell and Co. on behalf of Mr. P. Carter of Bhojepore.*

9.—Samples of Bengal Hemp called Dhuncha, (Æschynomene Cannabina.)—*Presented by Mr. Deneef.*

Mr. Deneef states that these samples have been dressed after the Belgian mode. A beegah will yield 173 lbs. of cleaned fibre and 92 lbs. of seed. A woman can dress about 4 lbs. a day.

10.—Mulberry plants and a Cassia plant from the Cherra Poonjee Hills.—*Presented by Major Carter.*

Major Carter was anxious to ascertain whether the specimens now presented were identical with the "Morus Multicaulis" referred so prominently to by Col. Sykes, as being a variety of the Mulberry attracting the greatest attention in America at the present time ; but on an examination being made, these plants appeared no other than the common White Mulberry.

11.—A Cocoanut Plant.—*Presented by Rajah Kally Kishen.*

12.—A Pine-apple and a bunch of Dahlias.—*Presented by Mr. D. W. H. Speed.*

The Pine-apple, which was a very large one, had been grown from the common Bengal stock, and improved by cultivation. The Dahlias were the produce of seed presented to the Society by Captain Kirke,—they were of many colours, plain and variegated, and were much admired.

13.—Specimen of the plant of St. Domingo, called by the Spaniards "Libidibi," (Cæsalpinia Cariaria of Willdenow) and a few pods of the plant.—*Presented by Dr. Wallich.*

Dr. Wallich stated to the Meeting that there are now a number of individuals of this very desirable plant in the Botanic Garden, where it was first introduced in 1835, by Mr. Hamilton, of Plymouth. The plant blossomed for the first time last year and is again in full flower, and ripe pods may be expected about a month hence. The pod is exceedingly astringent and used in the process of tanning. The plant, therefore, is likely to be of considerable utility.

14.—A small assortment of English Vegetable, and Flower Seeds, and a few varieties of Cotton Seed.—*Presented by Professor Royle, on behalf of the Court of Directors of the India Company.*

This packet had been transmitted by the last overland mail, and has arrived in excellent order. The supply being very limited, it was decided that a small assortment of each kind should be distributed to two or three Members, who kindly offered to test them, and to submit a report as to their goodness at the next Meeting.

DISPOSAL OF THE CANES AT THE NURSERY.

The Nursery Committee report that the number of applicants for Cane has so far exceeded the supply that it has been found necessary to reduce the quantity designed for each Member from 250 to 200, and to close the list from the day of recording its sentiments, ([illegible] Sept.) With regard to the necessity which exists, owing to the rapidly increasing demand for the Sugar of India, for the extension of the Mauritius, Singapore, and Otaheite canes, in order to meet the growing demands of the Members of the Society, the Committee report having taken immediate steps to prepare a further piece of ground which Dr. Wallich, the Superintendent of the Botanic Garden, has been so good as to assign for the purpose, and to prevent delay the Committee took on itself the responsibility of sanctioning an additional expenditure in order to go to work at once. The same being submitted to the Meeting was duly approved of and confirmed.

REPLY FROM THE GOVERNMENT OF INDIA RELATIVE TO THE REPRESENTATION WHICH THE SOCIETY MADE ON THE SUBJECT OF THE DISCRIMINATING DUTIES ON EAST INDIA RUM AND TOBACCO.

To H. H. SPRY, ESQ., M. D. *Secretary,*
Agricultural and Horticultural Society of India.

Finl. Dept. SIR,—I am directed to acknowledge the receipt of your letter dated the 9th instant, with the copy of the Resolution therein referred to, representing the great and increasing importance of promoting the cultivation of free labour Sugar in the Territories of British Asia, and repeating the urgent appeal of the Society for the removal of the discriminating duties on East India Rum and Tobacco imported into Great Britain.

2nd. I am directed to acquaint the Society, that their representation will be forwarded to the Hon'ble the Court of Directors, with the earnest expression of the concurrence of His Lordship in Council in the justice of the petition of the Agricultural and Commercial interests of this country, for the removal of the remaining inequalities in the [illegible] of

Great Britain affecting the Sugar and Tobacco cultivation of India.

I have the honor to be, Sir,
Your most obedt. Servant,
G. A. Bushby,
Secy. to the Govt. of India.

Council Chamber,
the 16*th September*, 1840.

CUTTACK BRANCH HORTICULTURAL SOCIETY—THE PROPAGATION OF FOREIGN SEEDS—ARRANGEMENTS FOR NEXT YEAR'S SUPPLY OF SEEDS.

The Secretary next submitted a note from Captain Reid, the Secretary of the Cuttack Branch Society, acknowledging the receipt of the supplies of seed which had been forwarded to him, and noticing that he had derived vast benefit from *forcing* the *English* seeds, which appeared to him fresher than usual. Captain Reid states that he has tried the seeds of the Cabbage species, some in good mould, similar to what is used at Cuttack for the Cauliflowers, of which there is always a good supply of acclimated seed at the Station, some in the same kind of mould but *scalded* in boiling water and *dried previous to sowing* and some in hot beds likewise scalded. By the last named method—the hot-bed with previous scalding—*not a seed failed.* There was however a great difference in the germination, and some appeared in three days, while others were longer, on to ten days. The plan Captain Reid is assured, is good, as from it he has abundance of plants of every sort, while the same quantity of seed in simple mould has not averaged more than one in twenty certainly.

Adverting to the interesting particulars relative to the best mode of propagating seeds which Captain Reid had so kindly favored the Society with, the Hon'ble the President took occasion to call the attention of the Meeting to the general disappointment which had been experienced by the Members with regard to their present year's supply of *English* seeds, and on the subject undergoing discussion it was, after various suggestions, agreed to appoint three members—Dr. Wallich, Messrs. C. K. Robison and Piddington, with the Secretary, a Committee to determine on the general instructions which should be issued to the Seedsmen in the despatch of seeds from London, and to solicit the aid of Dr. Royle, whose note containing the offer of general assistance was before the Society, in the arrangements before shipping the packages.

REPORT ON MONGHYR GROWN FLAX.

The Secretary desired to remark that it would be in the recollection of the members that at the last Meeting a specimen of flax prepared at Monghyr was submitted by the Honorable the President, on which occasion the opinion of the Flax Committee was particularly sought, as the sample was a specimen only of a quantity that was coming down the river from the Monghyr District, where the experiment of growing flax on a large scale had been undertaken by a practical European flax-grower. The sentiments of the several members of the Flax Committee were now submitted in the form of minutes which he begged to read to the Meeting.

Mr. FERGUSSON.—I myself do not think the Monghyr Flax good. Mr. Deneef is perhaps the only person capable of giving an opinion on the subject, but I should doubt even his. The sale in England of a good lot, is the only test to be relied on.

Mr. HODGKINSON.—The samples of Flax are of middling quality,—the fibre fine and strong, but deficient in cleanness and color;—the first defect arises from carelessness in scutching: with more care in the manipulation the article would find a ready sale throughout Europe. Mr. Deneef's opinion would be valuable*.

Mr. Robison.—I feel myself incompetent to give an opinion on the comparative values of the specimens of flax, further than that I do not consider the Monghyr Flax equal to the Archangel or Baltic, in evenness of fibre or color.

Mr. R. Watson.—Of the two specimens of *Rough* flax, the Baltic appears to me the strongest in fibre, and the dressed Monghyr very little inferior if any to the other sorts.

Mr. G. T. F. Speed.—I am of the same opinion.

Baboo Ramcomul Sen.—Ditto ditto.

Mr. D. W. H. Speed.—I have much to learn on the subject ere I could venture an opinion on the quality of the musters accompanying this, but I concur in the desirableness of ascertaining the comparative fitness of the different sorts in respect to durability for general purposes, and think that the only test to be relied on is the sale of a good lot in England.

Mr. Willis.—I do not pretend to have or to give either a scientific or a practical opinion on the specimens of Monghyr flax when compared with the European ones.

It is manifest however, to a common observer, that the three specimens of *dressed* Flax, the Archangel, Baltic and Irish are each superior to the *Monghyr undressed* one, in color, lustre, mellowness and cleanliness.

That the Baltic *rough flax*, which, of all the specimens, is the most legitimate for us to compare with the Monghyr *un-*

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* The samples were sent to Mr. Deneef, but that gentleman preferred not giving a written opinion. He expressed his willingness, however, to communicate verbally what he thought of the specimen, which was that he considered it the best sample of India grown Flax he had ever seen.—H. H. S.

dressed one, is also in each of the above named characteristics superior to it.

That the *Monghyr undressed flax,* not having undergone the degree of cleansing, and preparative manipulation which has been given to the *Baltic rough flax,* being more ligneous, &c., is not exhibited with all the comparative advantage it otherwise would have shewn;—but even allowing for this, I do not think it so meritorious in its general nature and qualifications as the *rough Baltic one.*

The Monghyr *undressed* specimen seems to possess more tow in proportion than the rough Baltic one, but which probably would have been less apparent with an *equal degree* of scutching and other manipulation. Its length of fibre seems somewhat inferior to that of the Baltic one. Its strength of fibre seems good; but its comparative degree of goodness in this respect with the *rough Baltic* or the three of the *dressed specimens* I will not now attempt to determine. But after all it seems so promising a production that I think the parties engaged in the experiment would do well, and would do best to send home a good supply of it to the various markets of London, Liverpool and Scotland, that they may derive the opinion of Merchants, Brokers, and Manufacturers as their most true and unerring guide.

ENCOURAGING PROSPECTS FOR ATTENDING TO THE HEMP CULTIVATION OF BENGAL.

The opinion of the Flax and Hemp Committee on the specimen of Hemp prepared by M. Deneef the Belgian Farmer at his grounds in the vicinity of Calcutta, presented at the last Meeting of the Society, was next brought forward. The economy of the cultivation is contained in the following interesting communication from M. Deneef himself:

Calcutta, ce 8, *7bre*, 1840.

Monsieur Spry,

Secrétaire de la Société d' Agriculture et d' Horticulture du Bengale.

J' ai l' honneur de vous envoyer par l' entremise de Monsieur Woollaston, member de votre Société, un échantillon de chanvre, que me semble mériter beaucoup d' attention, il me parait aussi avantageux que le chanvre de Russie et de Manille qui se vendent à Londres 22 à £27 le tonneau. La manufacture en est très simple et n' exige aucun instrument; elle est faite en Belgique par des vieillards et des enfants. Aucun ouvrage ne saurait être plus convenable pour les bras inactifs des familles pauvres de cette contrée, il n'est nullement fatigant et se fait par assis; de plus, chaque livre de chanvre, procure en teilleur 3lb. de matière á brûler.

La préparation du sol ne demande pas de grands soins ni par conséquent de grandes dépenses; la végétation est superbe, la plante n'occupe le sol que pendant 80 jours (du commencement de Juin, á la fin d' Août.) J' en ai à peu prés 4 beegas, qui me donneront environ 1000lb. de fibres, que je prépare en ce moment; et que je me propose d' envoyer le plutôt possible, pour échantillon, á la Société Expérimentale du lin à Londres, et aprés en avoir recu une reponse, concernant sa valeur réelle; je m'empresserai de vous envoyer un rapport exact sur le mode de sa culture.

Il serait étonnant que l' Inde, qui a tant de moyens en terrain et en hommes, ne pourrait pas concourir avec la Russie, qui est obligée de payer £2 par tonneau pour frais d' exportation, au gouvernement Russe même, et 6s. par tonneau au passage du Sond, et ne pourrait réclamer sa part des millions d' espèces, que la mère patrie est obligée de payer annuellement à la Russie. sa puissante rivale.

J' ai l' honneur de vous saluer avec la plus parfaite considération,

Votre très devoué serviteur,
G. DENEEF, *Belgian Farmer.*

Mr. FERGUSSON.—The Hemp appears to me uncommonly strong, and if it can be produced cheaply and abundantly, it is likely to be a most important article.

Mr. HODGKINSON.—I am sorry to differ in opinion with Mr. Fergusson in regard to the sample of what is stated to be Hemp—ere pronouncing it to be Hemp at all, I should solicit the opinion of Messrs. Spry and Wallich, as I am not quite certain on the point; however, the article is superior, be it what it may, and deserving of the first attention.

Mr. ROBISON.—The specimen offered as Hemp appears to me a raw unhackled Hemp.

Mr. R. WATSON.—The Hemp in point of *strength* seems to stand fair in competition with those of Baltic growth, but it would be desirable to ascertain its comparative *durability* in exposure to wet and dry as it would be subject in use for marine and most other purposes.

Mr. G. T. F. SPEED.—I am of the same opinion.

BABOO RAMCOMUL SEN.—Ditto ditto.

Mr. WILLIS.—The specimen of Hemp furnished by Mr. Deneef together with the report made in his letter of the 8th September 1840, seems highly flattering and encouraging.

The fibre appears to be of great strength and is *superabundant* in its length, and it is moreover rendered very clean.

Its acceptableness in colour, fineness, mellowness of condition, and in its other general properties, would be best tested by competent parties in Europe. It seems highly desirable that Mr. Deneef should soon send to the different European markets for trial, liberal supplies.

HOP CULTIVATION IN INDIA WITH A VIEW TO BE ABLE TO SUBSTITUTE BEER FOR TROOPS IN LIEU OF SPIRITS.

An important communication from the Military Board soliciting information relative to the growth of hops in India, as furnishing means for manufacturing cheap and wholesome malt liquor for the European troops in lieu of spirits, was next read.

To H. H. Spry, Esq.

Secretary to the Agricultural and Horticultural Society.

Commissariat Department.

Sir,—The attention of the Military Board having been called by Government to the gradual substitution of Beer for Spirits as an article of consumption by the European Troops, and as it appears almost hopeless to procure good Beer from Europe at a price sufficiently cheap to allow of its being purchased at Mofussil Stations by the men for the amount allowed as compensation for the usual drams, the Board have been induced to look to the growth of hops in this country as furnishing the means of manufacturing cheap and wholesome malt liquor on the spot.

2. Under these circumstances, it is hoped that the Horticultural Society may be able to assist the Board with information and advice; and I have accordingly been instructed to request that you will oblige the Board by mentioning, whether any attempts have to your knowledge been made to cultivate hops in India; and if so, whether the attempts were successful, and at what cost and in what quantity the hop was produced.

3. The Board would also be glad to receive your advice, or that of the Society, as to the best manner and time of procuring seed from England, and generally as to the measures

which you would recommend for obtaining a cheap and regular supply of this essential ingredient in the manufacture of Beer.

I have the honor to be, Sir,
Your most obedient servant,
H. De Bude,
Officiating Secy. Military Board.

Fort William, Mily. Bd. Office,
3rd November, 1840.

The Secretary mentioned that the only information which the Society possessed on the subject was to be found in the extract of a letter from a practical farmer in England to Sir Henry Fane, in the 5th vol. of the Transactions of the Society, p. 46, wherein mention is made of a supply of Hop plants having been despatched to Calcutta for His Excellency, and instructions conveyed in full as to the best mode of treating and cultivating them. And at the 102nd page of the *Proceedings* of the Society contained in the 7th volume, where a letter from Capt. Kirke at Deyrah will be found, in which it is stated that " the Hops are growing famously and their success is certain."

The Hon'ble the President thought the subject one of such vast interest that before an answer was returned to the Military Board the most recent information should be obtained, and therefore he would propose that Dr. Falconer and Captain Kirke should both be addressed on the subject, and solicited to give the Society the benefit of their experience, while other gentlemen who had had some concern in brewing Beer at Fort Glo'ster near Calcutta and other places should be consulted. This was agreed to.

TRANSMISSION OF TEST SAMPLES OF AMERICAN AND OTHER COTTONS TO THE AGRICULTURAL SOCIETY OF MADRAS.

A letter from Dr. Wight, the Secretary of the Madras Agricultural and Horticultural Society was next read. Dr. Wight states that the Madras Society was about to adjudicate prizes for different descriptions of American Cottons introduced into the Madras Presidency, but that the Committee appointed for the examination of the samples had at the outset been met by an unexpected difficulty which, unless the Society of India could aid it in obviating, might lead to erroneous awards. It was the want of good *test samples* with which to compare the prize specimens. Dr. Wight intimates that there are a number of competitors, and the Madras Society is given to understand some very excellent samples of Cotton will be produced, but unfortunately the Cotton trade at Madras for Foreign Cottons being, as yet, very limited, the Committee find on inquiry among the merchants that they could not supply the Members of it with any really good and genuine specimens of either Sea *Island, Upland Georgian, Egyptian,* or *Peruvian* Cottons, and therefore Dr. Wight by desire of the Committee, addressed the Society of India requesting the favor of its endeavouring if possible to put the Madras Society in possession of genuine specimens.

The Secretary informed the Meeting that some very excellent average specimens of all the Cottons asked for by Dr. Wight were in the Museum through the kindness of Messrs. Willis and Earle, who had presented them to the Society (vide vol. II.)—he had put up a portion therefore of each kind and despatched it without loss of time to Madras.

ON THE CULTURE OF COTTON, HEMP AND FLAX IN THE DISTRICT OF JUBBULPORE.

The next communication which was brought forward was an interesting extract of a letter from Mr. McLeod, who has charge of the Jubbulpore District. This officer writes that he is anxiously waiting for American cotton seed, as he is inclined to think that some kinds may be most advantageously sown with the rubbi (spring harvest) crops, especially the Pernambuco. Mr. McLeod has had a beggah of Flax cultivated at Jubbulpore on approved principles, and he obtained from it a fine dense crop; but having been sown late and the soil not being of the best it nowhere exceeded in length 18 inches. Mr. McLeod has made up a bruising machine for it, and with the aid of Mr. Williams of Major Sleeman's School of Industry, which Mr. McLeod describes to be a very great acquisition to the place, an endeavour is being made to manufacture the fibre. What was produced at the time of writing would scarcely suffice for anything finer than canvass, but hopes were entertained that better success would be attained and further information is promised.

FLOURISHING STATE OF THE BRANCH GARDEN AT DACCA.

The last communication which was brought forward was an interesting letter from Mr. Dearman, Secretary to the Dacca Branch Society, stating that there is a new crop of 12 beegahs of 80 cubits square in sugar-cane, and rather more than three beegahs remaining of rattoons, only part in Otaheite, which Mr. Dearman regrets, as he has found that all the canes from the former year's stoles have degenerated with the exception of the Otaheite, which, so far from falling off, has produced finer canes than those of the present season's planting. Under-these circumstances, Mr. Dearman considers, that the Otaheite cane, on the Dacca high lands, if properly attended to, would yield crops for several successive years. The other kinds, such as the Munnypore, the Sincapore, the Batavian and two indigenous kinds, appear to be mere annuals. Mr. Dearman feels sure that the many thousand beegahs of high waste land lying near Dacca, and beyond the reach of inundation offers a mine of wealth to any one having the means and disposition to engage in the cultivation of the Otaheite cane. The number of Members belonging to the Branch Society now amounts to 43.

DECEMBER 9, 1840.—GENERAL MEETING.

The Hon'ble Sir Edward Ryan, President, in the Chair.

(Twenty-five Members present.)

The gentlemen proposed at the November Meeting were elected Members of the Society:—

Messrs. Wm. Dunlop, J. B. Dickson, Geo. Reid, J. H. Young and John Dunbar; Lieutenant W. H. Delamaine; Captain T. D. Carpenter; Lieutenant Charles Hogge; Baboo Umes Chundra Roy; Messrs. R. S. Brodie, Edward E. Woodcock, Edward L. Ryder, B. W. Lazarus, W. P. Lewis, H. C. Hamilton and John Gray.

The names of the following gentlemen were submitted as candidates for election; viz.

J. B. Ogilvie, Esq. C. S.,—proposed by Dr. Wise, seconded by the Secretary.

H. Borradaile, Esq., Member of the Law Commission,—proposed by Dr. Strong, seconded by the Secretary.

Lieutenant Edward Lyons, Superintendent of Cachar,—proposed by Lieutenant Abercrombie, seconded by the Secretary.

John Alexander Donald, Esq., of Belsee viâ Budaon,—proposed by Mr. John Donald, seconded by the Secretary.

Colonel Charles Poole, Commandant of the Garrison at Chunar,—proposed by the Secretary, seconded by Dr. Wallich.

PRESENTATIONS TO THE SOCIETY.

Library.

1. Madras Journal of Literature and Science, (No. 27.)—*Presented by the Madras Literary Society.*

2. Proceedings of the American Philosophical Society, from April, 1839, to April, 1840, (Nos. 7 to 11.)—*Presented by the Society.*

3. Annual Report of the Geologist of Maryland for 1838.
Second Annual Report on the Geological exploration of the state of Pennsylvania.
Second Report on the Agriculture of Massachusets.
Premiums offered by the Horticultural Society of Pensylvania, for vegetables, fruits and flowers, for 1839.
Presented by the American Philosophical Society.

Museum.

1. Specimen of Moongah Raw Silk —*Presented by Mr. M. Herring of Assam.*

Mr. Herring mentions that this Silk has been wound off the cocoon by the Assamese, under his superintendence, and after a method superior to that pursued by the natives of the country. *Referred to Silk Committee.*

2. Two specimens of Raw Silk reeled by Jews residing at Cochin.—*Presented by Lieut. E. B Stevenson.*

Mr. Stevenson intimates that these samples are the result of the first attempt made by the Jews, to reel Silk; that they are a very industrious set, and if they can succeed in their endeavours to cultivate the Mulberry in that Province, Mr. Stevenson considers that there is little doubt of their eventually producing a superior staple. *Referred to Silk Committee.*

3. Specimen of Raw Silk manufactured at Bowsing Factory in 1836.—*Presented by Baboo Cossinauth Dutt. Referred to Silk Committee.*

4.. Sample of Cotton of the second generation, grown in the Garden of the Branch Agricultural Society of Dacca, from Upland Georgia Seed.—*Presented by Mr. J. F. Cooke, President of the Society. Referred to Cotton Committee.*

5. Sample of Cotton produced at Akyab from Egyptian Seed.—*Presented by Captain Bogle. Referred to Cotton Committee.*

6. Specimen of the Cane of Arracan --*Presented by Capt Bogle.*

Captain Bogle states that this Cane has been grown by a Native in very favorable soil, and with some little care; that the Cane from which the specimen has been taken was eight feet long and equally thick throughout,—but had it been allowed to attain maturity it would doubtless have been ten feet long at least. Captain Bogle mentions that this Cane is said to give a fine sweet juice, and that he considers it altogether a very superior variety. Captain Bogle further adds that the people are generally ignorant of the art of making good goor, but with such a Cane as this, almost indigenous, there is no doubt that a Sugar Factory at Akyab would have a very fair prospect of success.

7. Acorns from Darjeling.—*Presented by the Darjeling Plantation Society.*

8. A specimen of the indigenous vegetable, called Ool (Arum Campanulatum) of an unusual size, measuring 16 × 16 × 6 inches grown in a garden at Sorool, in the Burdwan District.—*Presented by Baboo Cossinauth Dutt.*

The Baboo states that the mode of cooking this vegetable is as follows :

The shell being taken off, it is boiled with rice, and mixed with mustard powder, mustard oil and salt, it is then cut into squares of a thin size, one, or one and a half tolah in weight; after which it is boiled, and put into boiling mustard oil, with the Salt added to it, and then fried up. To preserve the vegetable, it is shelled, then boiled in warm water and kept in lime juice with a mixture of salt and mustard powder.

ARRANGEMENTS FOR THE ANNUAL HORTICULTURAL EXHIBITION AND DINNER.

The Hon'ble the President intimated that the period had arrived for deciding on the time for holding the usual Annual Exhibition and Dinner. The Exhibition last year was found to have taken place at too early a date, and if there was no objection to the day he should propose that the forthcoming show and dinner should be on Friday, the 20th proximo. The same was agreed to unanimously and the arrangement of the details was transferred to the General Committee.

ARRIVAL AND DISPOSAL OF FRUIT TREES FROM ENGLAND— RESOLUTION REGARDING SEEDS.

The Secretary announced the receipt of three cases from the London Seedsmen of Dwarf Apples, Pears, Plumbs, Cherries, Peaches, Nectarines, Apricots, Grape Vines, Red Raspberries, White Raspberries, Red Currants, White Currants, Black Currants, Gooseberries and Figs in named sorts, by the ship *Duke of Bedford*, and mentioned that they had without loss of time been forwarded to the Nursery where they now were waiting the decision of the Society as to the mode of their disposal. It was arranged that they should be at once potted and examined by Dr. Wallich, Mr. Piddington and the Secretary, and advertised for sale by Auction at an early day. A return of 10 per cent. being made to those purchasers who were Members of the Society.

In connection with this subject the Secretary informed the Members that the Committee appointed at the former Meeting to determine on the best mode of securing seeds from England, had met and adopted a series of suggestions which would be incorporated in a letter to Dr. Royle and despatched by the next Overland mail.

The success of a consignment dispatched by the house of George Charlwood of Tavistock Row, Covent Garden—which had been received by him, was mentioned by Mr. Stopford, and in order to record the sense of the Society on the disappointment, which has been so universally felt on the failure of the seeds from Messrs. Noble and Sons, the following resolution proposed by Mr. Piddington, and seconded by Mr. Stopford, was unanimously carried:

"That the Agricultural and Horticultural Society of India, desire to record their extreme regret at the almost universal failure of the seeds sent out to the Society's special order: and that it requests Dr. Royle will be kind enough to convey to Messrs. Noble, the expectation of the Society that some compensation will be made for the very great loss and disappointment which it has thus experienced."

GARDENING OPERATIONS AT NAGPORE.

An interesting letter was next submitted, which had been received from Lieutenant Munro at Kamptee on the subject of gardening operations at that place. Lieut. Munro, after expressing his thanks for the very liberal supply of seeds of various kinds that had been sent to him, observes that he was informed by the old residents at the Station that it was useless to commence any operations in the garden till after the rains had ceased. This Lieut. Munro did not believe, and from subsequent experience, is now convinced that the notion is an erroneous one. He sowed a great number of seeds the last week in May, whilst the hot weather lasted, which was till about the 15th of the next month: they remained dormant in the ground, but as soon as the rains commenced they vegetated most freely and have thriven remarkably well, ever since; almost all the people at Kamptee are now converts to Lieut. Munro's system. A large grub (the grub of the cock-chafer he believes), is very prevalent at Kamptee, and does great mischief. Lieut. M. had heard of this and had the whole ground of his garden dug two spit deep and exposed in ridges during the dry weather. It has effectually destroyed them, "and whilst my neighbours," writes Lieut. Munro, "lost almost every plant they put down, I have not lost one" The native system of gardening, Lieut. M. considers, only brings the top surface into use and the grubs at a few inches depth are undisturbed. There is also another insect, very common indeed at Kamptee, immediately after the rains commence, which is supposed to injure young plants, but Lieut. Munro does not think it does at all; it is, he believes, a species of scolopendra—but with its habits he is quite unacquainted and should like to know where to obtain information regarding them. It is harmless and does not hide itself—sometimes of a morning Lieut. Munro has seen thousands in one small spot apparently just born, they vary considerably in colour. Since he has come to Kamptee, Lieut. Munro has had a very strong proof of the advantage of boiling seeds. In 1837 when on the Neilghurry Hills, Lieut. M. collected two pods of a very handsome species of convolvulus not quite ripe. He sowed some of the seeds at Bellary last year, and none of them vegetated. When he came to Kamptee he had four left; one he put into boiling water for 1½ minutes, the remainder he sowed in the earth simply. The one that was boiled vegetated in seven days with one cotyledon very much damaged. Out of the three others, two vegetated in about three weeks with one cotyledon also damaged, one died and the other has barely lived, and has now made a shoot three feet long. The one from the boiled seed grew most rapidly and has sent out shoots at all sides from twenty to thirty feet. It is by far the most extensive creeper he has seen amongst the convolvuli. It has not yet flowered; should it prove to be new, he says, that he will not fail to send some seeds of it to the Society, as it is beautiful in its foliage; the young leaves are all copper-coloured.

ON THE PROPRIETY OF ESTABLISHING EXPERIMENTAL FARMS THROUGHOUT INDIA WITH THE SUPPORT AND UNDER THE SUPERVISION OF THE STATE.—LOCATION OF AMERICAN COTTON PLANTERS AT CULPEE.

The Secretary desired to inform the Meeting that he had been favored with a long and interesting communication from Mr. Smith, the Collector at Delhi, on the important subject of establishing Experimental Government Farms. Mr. Smith states that the note which he has the pleasure to transmit, was drawn up some months ago but not submitted to the Society at the time, inasmuch as it appeared to him that one of the principal objects which he had in view, when he wrote it, (viz. the improved cultivation of Cotton,) would be secured by the adoption of the measures advocated by the Society in the report by the Special Cotton Committee to Government, which report he had not perused when his note was written.

It has since occurred to Mr. Smith that it might be considered satisfactory to the Society to find the measures which it proposed not essentially differing from those which are advocated by a member residing in part of the country where Cotton cultivation prevails; and it has besides struck him as possible, that the Society might be induced after reading the note, to modify the plan by recommending that other experiments besides those in Cotton should be carried on with the support and under the supervision of Government.

Mr. Smith is now preparing, and hopes to be able to submit to the Society shortly, a note on the cultivation and produce of Cotton indigenous to the Delhi and Muttra part of India, the information contained in which will, he hopes, have the effect of inducing the Society to fix on some place in that neighbourhood for prosecuting the experiments in Cotton cultivation.

Before however finally deciding on the several localities for Experimental Plantations, Mr Smith strongly recommends that the Society should apply to Government, for its aid in obtaining information regarding the quantity of land cultivated, average produce, selling price. cost of cultivation, Government revenue, and profit on every acre of Cotton cultivation within the Company's Territories.

This can be best secured, Mr. Smith thinks, by calling upon the several local revenue officers, to furnish statements of an annexed, or somewhat similar form, containing the information in question for each Pergunnah, in their respective jurisdictions.

With this information before it, the Society would be enabled to arrive at a satisfactory conclusion as to what localities were best adapted for its operations, which it is impossible it can do with the imperfect information now before it.

In illustration of his position, that existing data are most unsatisfactory, Mr. Smith instances those furnished from the

Madras Presidency contained in Major General Brigg's pamphlet on the Cotton trade of India. In page 65 of this work a table is given of the produce, charge, assessment, and profit, on an acre of Cotton land in thirteen districts on the Madras Coast.

If this table is correct, many of the cultivators on the Madras coast grow their Cotton at a heavy loss, the value of produce in several instances, being considerably less than the cost of cultivation and Government revenue.

It is not however credible, Mr. Smith considers, that land in the Vizagapatam District, which yields 290lbs. of Cotton, could have been assessed at fourteen rupees an acre, (in Mr. Smith's neighbourhood land yielding a similar produce scarcely pays as many annas), or that six rupees fifteen annas should be taken in one District (Rajahmundry) where the produce is 97lbs. of Cotton per acre, when seven annas six pie only is taken at Tanjore where the produce is stated to amount to 103½lbs. Neither is it to be believed that the cost of cultivation per acre in one District (Guntoor) should amount to only one rupee eleven annas eight pie, whilst in the adjoining one it is stated to involve an expense of eighteen rupees eight annas per acre.

In short this statement which has furnished grounds for endless declamatory attacks against Government for its rapacity, bears, as well as most others of a similar nature, internal evidence of its inaccuracy, and Mr. Smith would therefore as before mentioned by him, strongly recommend that before anything is attempted, accurate information should be sought for from each Presidency, District, and Pergunnah where Cotton is grown, embracing every particular.

The only difficulty that occurs to Mr. Smith, is getting a correct account of what portion of the produce is applied to pay the cost of cultivation and what to profit.

In the Delhi and Muttra part of India the whole of the profits, i. e. all surplus beyond the actual subsistence of the cultivator and the Government revenue, are absorbed in rent (not revenue) to the zemindar as middleman, and interest to the soukar or banker who supplies stock, seed, &c.

It is obvious, Mr. Smith says, that if an account is called for from a number of people as to the disposal of the produce, some will class under the head of cost of cultivation, what others will call profit (of stock). In calling for any statement therefore, of the nature which Mr. Smith recommends, it ought to be distinctly explained that the cost of cultivation should merely contain the actual subsistence of the cultivator, and the profits include rent, (of the middlemen if any,) and the profits of stock derived by the soukar.

In illustration of his meaning Mr. Smith supposes a case.

A cultivator grows ten acres of Cotton which yields ten maunds of Cotton Wool, worth 100 rupees.

The produce is thus disposed of :—the subsistence of the cultivator and his family and bullocks absorbs sixty rupees—the Government revenue is ten rupees—the rent of the zemindar fifteen rupees, and the surplus fifteen rupees is the profit or return which the soukar gets as interest of money on advances which he has made for the purchase of cattle, seed, and subsistence to the cultivator, between the sowing and gathering of the crop. In this case, the cost of cultivation is sixty rupees, the Government revenue ten rupees, and the profits thirty rupees. The only person who really derives any profit is the zemindar or middleman, that which is taken by the soukar being in fact the profit, or interest on his advances for stock, &c.

In not one case out of ten in the North Western Provinces, does the actual cultivator participate directly in the profits. Where there is a ryotwar settlement, it is possible that the cultivator may in some instances participate in the profits, though Mr. Smith imagines he (the ryot) will be found in most cases in the hands of the soukar.

Mr. Smith desires however to postpone all further remarks on this interesting subject until he submits his note on the Cotton cultivation of the Delhi and Muttra part of the North Western Provinces. In the meanwhile, Mr. Smith says, he shall be glad to learn that the Society has applied to Government to obtain the information which he proposes should be called for from every part of India, without which he feels satisfied that there is a probability of the exertions of the Society being misdirected.

At the conclusion of the reading of the foregoing valuable letter, the Secretary submitted the notes, and form of table, which Mr. Smith had been so good as to favor the Society with, on the benefit to be derived by establishing Experimental Farms for the introduction of new and the improvement of known products in various parts of India*.

The Hon'ble the President took occasion to remark, that the subject of Mr. Smith's papers was so intimately connected with the object which the Government had immediately in view, that he thought he could advert to it with advantage. He alluded to the establishment of the Cotton Farms, under the management of the American Planters who had come out

The Society must be aware of the great difficulty which it had for a long time experienced in procuring Cotton seed from America, and the suspicion, which had been entertained by many on the jealousy which our Transatlantic brethren had evinced at the attempts now making to improve the Cotton cultivation of India, would seem almost to be justified by the conduct of the American Press towards Captain Bayles, who had

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See Article 33.

gone to America to obtain the services of some clever experienced Cotton Planters. The Hon'ble the President said that he had the satisfaction however of knowing that this feeling was not entertained by all, and two American gentlemen were exempt from any jealous feeling of this kind ; for to the exertions of Dr. Huffnagle and his father were the Society indebted for the supply of seed which is now daily expected viâ Liverpool.

The Home Government (he said) had decided on carrying on the experiment of Cotton culture, by its own officers, and it had appointed Captain Bayles to be the Superintendent—and he stated the substance of the following official letter :—

The Secretary to the Agricultural and Horticultural Society.

Revenue. { SIR,—I am directed by the Right Hon'ble the Governor of Bengal to intimate to you, for the information of the Society, that, under orders from the Home Authorities, the American Cotton workmen, who are expected from England, are to be employed, under the direct authority and control of Government, and not as was at first contemplated under the superintendence of the Agricultural and Horticultural Society.

2. The scene of operations is to be in the neighbourhood of Calpee, and the workmen are to be placed at separate stations, within communicating distance of each other, two on each side of the Jumna, near Calpee, where Captain Bayles, who is to be entrusted with the duty of immediate superintendence, will have his head-quarters fixed.

3. His Lordship desires me to add, that while the attention of Government is being drawn by the Home Authorities to the improved culture of Cotton, he will be happy to receive from the Society any suggestions that may occur to them, and that he will gladly avail himself, as occasions may arise, of the Society's advice and assistance in carrying the plans of Government into execution.

4. By this opportunity, the Society will receive a copy of Dr. Royle's Report on the Cultivation of Cotton in India.

I have the honor to be, Sir,
Your most obedient Servant,
J. H. YOUNG,
Dy. Secy. to the Govt. of Bengal.
Fort William, the 13th October, 1840.

With regard to the propriety of submitting to the Government the proposition for the statistical information sought for by Mr. Smith, the Honorable the President said, he felt great doubts, whether the Government would be disposed to comply with the request, if made, for it was one that, to be efficient, would require a call to be made on all the public revenue officers throughout the country, and would necessarliy occupy much of their time. Under these circumstances, perhaps, the publicity of Mr. Smith's views, might attract the notice of Government, and if it was thought proper to issue instructions to the local officers, it could be done without the intervention of the Society.

DEPRESSED STATE OF AGRICULTURE IN TRAVANCORE.

The Secretary next brought forward a letter which he had been favored with, from Lieut. Stevenson at Cochin, whose present of silk, as wound by the Jews, will be found recorded in the list of presentations. Lieut. Stevenson says, that he has succeeded in making some tolerable sugar, and has shown some of the sugar-cane cultivators, how to make it ; but he says that they require to be constantly excited to exertion, until it is clearly proved that the manufacture and cultivation of an article is profitable, when they may be safely left to themselves. Since General Fraser, the British Resident, left the country, all attempts at improvement have met with opposition from the cold Government of Travancore, and Lieut. Stevenson feelingly states that it is an unhappy sight to see so fine a country allowed to remain in such a miserable state. "If (he adds) the Government would only expend a tenth of the money towards the improvement of the country that it does in feasting Brahmins, the land would become a perfect garden, and until another Fraser, and a better Dewan are at the head of affairs, the country can never be what nature intended that it should."

DESPATCH OF FOREIGN AND INDIGENOUS SEEDS TO CHUSAN.

An application from Government, for an ample supply of European vegetable and native esculent seed was next brought forward, and the Hon'ble the President stated that an abundant supply had been prepared to meet the wishes of Government, for despatch by the *Cruizer*. The Secretary mentioned that he had supplied 50 packets of Cape seeds, and a considerable quantity of the seeds of such vegetables as are used by the Natives of India, as condiments, the expense for which will be duly rendered to Government.

ON THE RICE OF PURNEAH AND THE ADVANTAGES RESULTING FROM AN INTERCHANGE OF INDIGENOUS SEED.

The Secretary desired to recall to the attention of the Meeting the substance of a communication which he had submitted from Mr. Pratt, on the value of introducing Carolina rice into some of the pergunnahs of the Purneah district, and stated that the country was indebted to the exertions of Mr. Hurry for this valuable change.

It now appears that the rice which Mr. Hurry despatched to Purneah and was considered by Mr. Pratt to be *Carolina* rice, is not American rice at all, but an indigenous sort. The following are the interesting particulars which Mr. Hurry has favored the Society with in a letter to the Secretary:

Calcutta, 28*th September*, 1840.

MY DEAR SIR,—Referring to a communication with you on the subject of rice introduced by me into the District of Purneah, and stated by Mr. Pratt to be Carolina rice, I think it is necessary to explain to the Society, that I never sent any Carolina rice to Purneah. Soon after my arrival in this country, being largely interested in the rice trade, I procured samples of various kinds of the grain from all the Countries between Penang and the North West Provinces, both the *dry* and *wet* varieties, and also Carolina seed. After a vast many trials, the kinds proved to be best suited to the English market were some grown in the neighbourhood of Baraset within a few miles of Calcutta. These I introduced into Purneah, and at first had very great difficulty in inducing the ryots to cultivate it, though I understand that it is now general in the District; it is easily distinguished from the common paddy while growing by the colour. The Carolina rice and also Bareilly were tried in this vicinity and succeeded very well, but the *Carolina* underwent a great change, assuming the long shape so well known as characterizing the Bengal rice; whether this arose from intermixture into other sorts, I do not know, but I rather believe so, as it is impossible to make the ryots take the necessary pains to keep them distinct. The people in England, it should be remarked, judge of rice entirely by appearance, not by its quality as food. Here on the contrary the natives only regard the value as food, and can accurately distinguish the properties of each variety, even when the appearance to our eyes is quite similar. The test of market value is therefore wholly different in the two countries, and those who would cultivate for shipment must bear this in mind.

I remain, your's very truly,

Wm. Cobb Hurry.

For all the foregoing valuable contributions, the thanks of the Society were accorded.

HENRY H. SPRY, M. D.

Secretary.

REPORT

OF THE

AGRICULTURAL AND HORTICULTURAL SOCIETY OF INDIA,

FOR THE YEAR 1840.

Introductory remarks.

If, in bringing forward, for the last few years, the details which have transpired during each successive year of the progress of its labour in the useful pursuits to which its attention is legitimately bent, an expression of pride has been indulged in by the Agricultural and Horticultural Society of India at the rapid accession of patronage which has met its career, how much more glowing ought this feeling of satisfaction to be on submitting the account now to be presented.

Approbation and Government patronage of the Society.

The year 1840, must ever stand pre-eminent in the annals of the Agricultural and Horticultural Society of India; since, in reward for its services, it has not only received the most public expression of approval from the chief authorities in England for the benefits it has conferred on the country and the judicious manner in which its functions have been exercised, but, in conjunction with another useful body, has been presented, at the hands of the Supreme Government, with a valuable piece of ground whereon to erect an edifice worthy of the Institution and its supporters.

Presented with a piece of ground for the erection of an edifice.

Works of favor such as these the Society cannot but fully appreciate, and the record of an event so interesting, so important, and so momentous to the well-being of the Society as the latter circumstance especially is, calls for the fullest commemorative recital.

Up to the present time the business of the Society has been transacted in a side-room at the Town Hall where, while the Members were limited to a few, and the presents to the Museum, small, space sufficient was found to accommodate all purposes, but the rapid accession of Members which has taken place since the year 1836, coupled with the numerous valuable presentations which have been made, has rendered the room no longer sufficiently commodious, and the question as to the fittest means whereby accommodation such as is now required could be secured, necessarily forced on the attention of the executive for consideration.

The assets of the Society alone did not permit of the purchase of a piece of ground, nor of the erection of the building commensurate with its wants, even if an appeal were made for private aid from among its Members.

Fortunately assistance offered in another shape. Numerous members of the Indian community of all classes, to commemorate the excellencies of Sir Charles Theophilus Metcalfe, and the blessings of an emancipated press, sought with the various sums to produce some testimonial in the shape of an imperishable tribute to his worth. The money thus subscribed was yet unappropriated when the trustees over it, with the liberality which characterised the donors themselves, considered no mode of disposition more likely to meet the wishes of the givers and the receiver than that of joining with the Agricultural and Horticultural Society of India in the erection of a building which should be devoted to the double purpose of spreading the blessings of plenty before the people, and giving literary information to the more cultivated classes of the land.

With this view in prospect an application was addressed to the Head of the Government for the grant of a piece of ground whereon to raise the edifice, and with that consideration and attention to every application which has the promotion of usefulness for its object, His Lordship, the Right Hon'ble the Governor of Bengal, gave the request his immediate favorable notice and conceded the grant of the best piece of Government land at his disposal.

From the funds of the Society the sum of ten thousand rupees was voted, while a private subscription of six thousand, two hundred and twenty-four rupees has been realized from among the members, making the contribution on the part of the Agricultural and Horticultural Society of India altogether to amount to 16,224 rupees. The only stipulation enjoined in the Government letter transferring the ground is, that the edifice to be erected shall be ornamental and substantial, and that on failure of its being maintained in repair the ground shall revert to the Government, or, at least, that the building shall not without the consent of Government be alienable to other purposes than those set forth in the correspondence. To insure the foregoing object the four Vice-Presidents of the Agricultural and Horticultural Society of India, and the Curators of the Public Library for the time being, are nominated ex-officio trustees.

The preliminaries being thus matured, a plan which had been prepared by Mr. Robison, was submitted and approved of by the Joint Committee (see margin) and on the 19th of December, the ceremony, according to Masonic honors, was performed of laying the chief stone of a building, which in reference to the distinguished personage to whose name it is destined to do honor, has been denominated THE METCALFE HALL, the total cost of which the Builder has contracted for at 48,000 rupees.

The Hon'ble Sir E. Ryan.
James Pattle, Esq.
Col. McLeod.
H. M. Parker, Esq.
L. Clarke, Esq.
W. P. Grant, Esq.
J. R. Bagshaw, Esq.
Major Forbes.
W. Carr, Esq.
Dr. Spry.

As a matter of record it is right to mention that the inscription on the copper tablet laid on the stone was to the following purport:

Inscription on the Plate, deposited in the Foundation Stone of the Metcalfe Hall.

In the Reign of
HER MOST GRACIOUS MAJESTY
VICTORIA,
AND UNDER THE AUSPICES OF THE
EARL OF AUCKLAND,
Governor-General of India,
THE FOUNDATION STONE OF
THE METCALFE HALL,
WAS LAID WITH MASONIC HONORS
BY
JOHN GRANT, ESQ.,
Provincial Grand Master of Bengal and its Territories,
ASSISTED BY
JAMES BURNES, *K. H.*,
Provincial Grand Master of Western India,
W. C. BLAQUIERE, ESQ., *Past D. P. G. M. Bengal,*
SIR EDWARD RYAN, *Kt., P. G. S. W.*
Major W. BURLTON, *P. G. J. W.*,
and a highly numerous and respectable convocation of the Craft,
On Saturday the nineteenth day of December,
In the year of our Lord 1840,
In the Æra of Masonry 5840.

THIS EDIFICE
WAS ERECTED AS A TESTIMONY OF RESPECT TO
SIR CHARLES THEOPHILUS METCALFE,
WHO ON THE 15TH DAY OF SEPTEMBER, IN THE YEAR OF OUR LORD
1835,
IN VIRTUE OF HIS AUTHORITY AS GOVERNOR-GENERAL OF INDIA,
AND WITH A GENEROUS AND ENLIGHTENED REGARD
FOR THE CAUSE OF TRUTH AND THE INTERESTS OF MANKIND,
GAVE LIBERTY TO THE PRESS OF INDIA.

THESE WALLS
WILL NOT MERELY RECORD A NAME
THAT CAN NEVER BE FORGOTTEN:
BUT RECEIVE AND PRESERVE
A Public Library
AND THE
MUSEUM
of the Agricultural and Horticultural Society of India,
AND THEREBY CONTRIBUTE TO THE PUBLIC GOOD,
AN OBJECT OF THE DEAREST IMPORTANCE
TO THE LIBERAL MIND AND BENEVOLENT HEART
OF
SIR CHARLES METCALFE.

[ON THE REVERSE OF THE PLATE.]

The funds for erection of this Edifice were raised chiefly by public subscription. The valuable piece of ground on which it stands, was the munificent grant of the RIGHT HONORABLE THE EARL OF AUCKLAND, Governor of Bengal, who is ever ready to support the interests of the people, now happily under his administration, and to foster every undertaking that may benefit or adorn the City of Calcutta.

The building was designed by C. K. Robison, Esq., Magistrate of Calcutta, and built by Messrs. Burn and Company.

Economy of the Society.

To pass on now to the consideration of other topics of an equally interesting character, the first thing that requires notice is the continuously flourishing state of the Society's affairs. On this subject it will be found that there has been an accession of *one hundred and ten candidates* to the list of Members during the past year, and that the entire strength of the Society now amounts to 564. Agreeable to former usage the classification is here given and stands thus.

	In sixteen forme years.	In 1837.	In 1838.	In 1839.	In 1840.	Gross total.	Total real number at the close o 1840, after deducting lapses.
Civilians in the service of Government, ...	46	41	11	27	27	152	139
Merchants and Traders, ..	31	36	28	15	19	129	118
Indigo and other Tropical Agriculturists, ...	25	21	43	23	27	139	123
Military Officers, ...	34	17	18	15	18	102	80
Medical Ditto, ...	14	16	10	7	7	54	35
Asiatics, ...	13	9	7	1	7	37	32
Clergy, ...	5	2	2	1	0	10	5
Law Officers, ...	14	5	1	5	3	28	20
Honorary Members, ...	6	1	0	1	0	8	6
Miscellaneous, ...	0	0	4	0	2	6	6
	188	148	124	95	110	665	564

The total number of Members on the list of the Society at the end of December, 1839, was 486. This with the addition of 110 new elections makes the gross total number of Members up to the present time to amount to 596. From this must be deducted resignations 16, and deaths 16, in all 32, making the real number now borne on the records to be 564. Of this number 45 are Members who availed themselves prior to 1838, of the low rate for compounding which, to draw support, was then permitted—53 are in Europe, and six are honorary members,—making in all 104 to be deducted, and thus leaving 460 as the actual number of paying members, *instead* of 387 as last year.

The circumstance of so great an accession of strength for the two previous years (the limited extent of the European community in British India being considered), led in the report of last year to the expression of a doubt whether such a continuance of patronage for the future could be reasonably calculated on, especially when the inducement for compounding, might be said, no longer to exist. But the result of the past twelve months has more than realized the most sanguine expectations. The number of new elections, as already stated, has been 110 and exceeds that of last year by fifteen. Thus a most gratifying proof is afforded that a generous feeling is abroad to support the utilitarian objects of the Agricultural and Horticultural Society of India.

Necrology. In the list of casualties by death, it is with unfeigned regret that the Society has to announce more than one who has adorned the age by the splendour of his attainments. Last year it was the painful duty of the executive to report the death of Mr. George Prinsep, a most actively ardent Member; and now first and foremost in the list stands the name of his brother, Mr. James Prinsep. What the Society and the public at large has lost in him may best be estimated by the testimony of a Public Meeting, and the means which an extensively public contribution has secured for giving to posterity a record of his worth. The reputation of Mr. James Prinsep is too well known to the whole body of the Members of the Society to require any detailed eulogium in the present report, but as a Member of the Agricultural and Horticultural Society of India, it was impossible silently to record his loss.

The next in the list of departed Members comes the name of Dr. Helfer. This gentleman in the short period that he had been in official employ had earned for himself a high character for his industry and scientific knowledge. His untimely end must be fresh in the recollection of all. Ardent in the pursuit of his favorite occupation, he unsuspectingly ventured among the aborigines of the Andamans, and being surrounded—was seized—and barbarously put to death. The Society has been favoured with many interesting communications from the intelligent pen of Dr. Helfer, and has deeply to deplore the catastrophe which has caused his melancholy death.

In Capt. Pemberton, General Oglander, and Sir Thomas Anburey, old and staunch Members, the Society has sustained further loss, while in the general list appear the names of Capt. Dallas, Dr. Alexander Stewart, Mr. R. H. Mathews, Capt. Mathew Smith, Mr. George Palmer, Mr. Quantin, Mr. Muller, Dr. D. McLeod, Mr. Preston, Capt. Hone and Mr. Wooldridge.

Work done by the Society—Cotton Cultivation.

The first subject that calls for remark in the order of arrangement, is the progress of the measures resolved on for effectually improving the cotton cultivation of India.

In the report which was laid before the Society last year, an expression was then indulged in to the effect that the accumulated mass of information in support of the fitness of the Indian soil to furnish cotton, left no doubt that with care in the selection of the sites, attention to the husbandry of the tree, and the skilful application of modern knowledge to the art of cleaning the wool for the home market, the export of cotton from India would be a business of yearly increase. Alive to the vast amount at issue on the stake, the merchants of Manchester, as is already known, bestirred themselves in the matter in a manner commensurate with its importance. A deputation of them set out from Manchester and proceeded to London to wait on the Court of Directors of the India Company with a memorial, a copy of which was forwarded to the Bengal Chamber of Commerce, and by that body submitted to the Agricultural and Horticultural Society of India, whose Secretary in reply, prepared a summary of the information that was contained in his office of the efforts that had been made from time to time in various parts of India, by the Members of the Society and other individuals, to introduce and establish successfully the perennial cotton cultivation of the west.

While the Secretary had the preparation of this summary in hand, a corresponding movement was going on at home. The Court of Directors of the East India Company engaged themselves early in the year (1839) in deliberating on the great measure of cotton cultivation in the Empire confided to their care, and on the 24th of March prepared a despatch to the Right Honorable the Governor General, wherein they say that they are deeply impressed with the importance of the object, and that they are aware that the success which has attended the cultivation of cotton in India has not been so great as could be wished; that from the best information that they have obtained, there appears to them no reason to doubt that under proper management and superintendence, India is capable of producing cotton in quantity, to compete with the cotton from North America; that some essential points of information, relative to the mode of culture, the time and manner of gathering, remain still to be gained, and that the great importance which they attach to the acquirement of this knowledge by the natives of India, has induced them to consider the propriety of deputing persons to North America to engage, if possible, parties willing to proceed to India for the purpose. The Court then go on to say that it relies on the exertions of the Governor General for adopting effectual measures and affording facilities for promoting and extending throughout India, any plans which may seem best suited to the attainment of the important objects contemplated in the despatch so soon as his Lordship may receive the necessary information.

The Court then add, that should his Lordship in Council be of opinion that the important objects which it has in view will be promoted by the offer of a reward at each of the Presidencies for the exhibition of a certain quantity of cotton properly cleaned, that then the Court authorize him (the Governor General in Council), so to do, and to offer rewards of such an amount as his Lordship may consider sufficient to stimulate parties engaged in the production to exhibit cotton of good growth and cleaned by machinery, and that the quantity so exhibited should not be less than 300 bales.

The Revenue Secretary in his letter of the 22nd October, 1839, in transmitting this despatch to the Secretary of the Society, intimates that he is desired to do so by the Deputy Governor of Bengal, with the request that it, as well as the documents which accompanied it, including a minute by the Right Honorable the Governor-General himself, might be brought early to the notice of the Agricultural Society: the subject was one confessedly of the utmost importance.

In this letter from Mr. Halliday, the attention of the Society is particularly invited to the minute by the Governor General. The Society is informed that his Lordship is anxious to obtain, in furtherance of the views of the home authorities, the co-operation of the Society—under whose superintendence his Lordship considered it would be desirable to place the planters that were expected to arrive in India from America, and as this latter measure was deemed a point of primary importance, the Society was requested, if it was willing to undertake the task, to favor Government with a full exposition of the plan upon which it would wish to proceed—furnishing, as far as it could, a statement or estimate of the monthly expenditure, together with information on all points connected with the subject in question.

The minute of the Governor General, as is well known, takes a comprehensive view of the efforts that have been made both by the exertions of Government and by private enterprise to establish a better system of cotton culture throughout India, and weighs with mature consideration, the various practical suggestions that have been offered to his Lordship's consideration in the matter of Indian agricultural improvement generally.

His Lordship's minute was penned while residing in the Himalayah, away from the seat of his Government. It is therefore transmitted to the President of the Council with the suggestion that a copy of the Court's despatch and of the minute, with such further observations as may occur to the President to add, should be furnished to the minor Presidencies for a report of their opinions on all the points submitted to their notice; while in Bengal, His Lordship believed, that the object was well provided for by the excellent measures and admirable zeal of the Agricultural and Horticultural Society of India, to whom the Government of India as well as the community were, in His Lordship's opinion, under the highest obligations; and His Lordship further adds, "I would at once say, that I would with perfect confidence and satisfaction entrust the employment of the expected American planters with the application of any expenditure which might be sanctioned by the Government, as well as the guidance of the further experiments about to be entered on, to the general superintendence of the Society." (See Minute as printed in Vol. VII. of Transactions and Proceedings of the Society.)

On these documents being submitted to the attention of the Society, which was done at the General Meeting on the 13th November, 1839, the vast importance of the measure referred to in them, was made the subject of general remark, and, in reply, the Secretary was desired to state that the Society accepted the proffered trust; while the Standing Cotton Committee, reinforced by several members conversant with the subject of Indian agriculture, the condition of the soils, the places best suited for the location of the American instructors and the preparation of the wool for commercial purposes, undertook, as requested, to prepare a report and propose a plan for carrying into execution the contemplated project.

This report was brought up and presented at a Meeting of the Society specially held for the purpose on the 19th of February of the past year, and on that occasion, the document having previously undergone the maturest consideration in Committee, paragraph after paragraph was read and discussed in the order in which it appeared. The stations and mode of disposal of the American planters were the subjects first considered and decided on; then followed the consideration of the duties to be performed by the planters and their assistants—how the cotton should be cultivated—the mode in which payment for the culture should be made—the nature of the superintendence which should be exercised—an estimate of the expense which was likely to attend the working of the experiments—and lastly, the amount and conditions for which premia should be offered. Observations were offered on all these various heads by different Members at the Meeting, and the report after having undergone publication in the daily newspapers and been circulated in the form of a pamphlet and allowed to lie over for public comment for a month, was finally read and passed.

The report thus settled on was sent in to Government on the 20th February, and the next intimation which the Society received was from the Deputy Revenue and Judicial Secretary, on the 28th of April, announcing on the part of the Right Hon'ble the Governor of Bengal, that His Lordship in Council had put off the consideration of the question until the receipt of the replies which might be sent to the references made to the other Presidencies. The Society was asked in the meanwhile to furnish a more particular statement of the grounds on which the conditions were framed for granting rewards for a superior description of cotton.

This was accordingly done by stating that as the Court of Directors considered that no reward should be offered for a less quantity than 300 bales, the schedule of awards was regulated accordingly. At the last August Meeting a communication from Dr. Royle, dated India House, June 4th, was read, in which mention was made of the arrival in England and of their early departure for India of ten American planters, four of whom were destined for Bengal, three for Madras and three for Bombay.

At the meeting next following, that is to say, in September, the Society was favored by the Supreme Government with a copy of a despatch from the Court of Directors of the India Company, in which although cotton is not specifically named, reference is so clearly made to this article that it is not out of place to refer to it as showing how alive the Court seems now to be to the necessity of stimulating the dormant energies of the people. The opening paragraph of the despatch is as follows: "We have on various occasions given expression to the strong interest which we feel in the development of the agricultural resources of India, and to the deep sense which we entertain of the importance of directing attention to the subject."

At the same time extracts from a letter by Captain Grindlay and one by General Briggs were read, giving particulars regarding the Americans and their contemplated pursuits, showing the interest which was being paid to the effort now making by the Government to bring about an improvement in the cotton cultivation of British Asia.

After a longer delay than was calculated on, the American planters have reached India, and are placed under the orders of the respective governments. The official announcement relative to the disposal of the four who are destined for employment under the Bengal and Agra Presidencies, was read at the Meeting of last month (December), and is to the effect that the Right Hon'ble the Governor of Bengal desires to inform the Society that, under orders from the home authorities, the American cotton workmen are to be employed under the direct authority and control of Government, and not, as was at first contemplated, under the superintendence of the Agricultural and Horticultural Society.

The scene of operations, the communication adds, is to be in the neighbourhood of Calpee, and the workmen are to be placed at separate stations within communicating distance of each other, two on each side of the Jumna near Calpee where Captain Bayles, who is to be intrusted with the duty of immediate superintendence, will have his head-quarters fixed.

An intimation is also conveyed, that while the attention of the Government is being drawn by the home authorities to the improved culture of cotton, His Lordship will be happy to receive from the Society any suggestions that may occur to it, and that he will gladly avail himself, as occasions may arise, of the Society's advice and assistance in carrying the plans of Government into execution.

Here ends all that has occurred between the Government and the Society relative to the public measures which have been and may be adopted to bring about an improvement in the cotton cultivation of India.

Work done. Agricultural returns of the prices of produce.

Leaving this subject now to take its course under Government management, the business which follows next in succession is the disposal, during the past year, of the numerous returns which, at the instigation of Government, the Society set about procuring and arranging relative to the prices of various staple articles of commerce in the different provinces and districts of the empire.

At the January Meeting these papers were presented, and the Committee that had been specially appointed the previous year for prosecuting the subject, was desired, in order to meet the express wish of the applicants, to arrange them so as to show the course of trade geographically. At the Meeting held on the 8th April, progress was reported, and on the 9th September the final report was made.

The numerous tables which accompanied the report was accompanied with a map of a geological character, in which was exhibited the names of the several places whence the returns had been received, with a coloring indicative of the general geognostic features of the country.

The report, the tables, and the map were forwarded to Government on the 30th September, and have since been ordered to be printed.

Work done. Introduction of a new species of mulberry plant.

The propriety of introducing into Bengal the new species of mulberry called Morus Multicaulis, attracted the consideration of the Society in the commencement of the year, in consequence of a communication which was made from the Supreme Government on the subject. The letter of the Secretary to Government gave cover to a long and interesting account from the pen of Col. Sykes of the great advantages which this species of mulberry tree possessed over that of all others for rearing of silk-worms, and was addressed to the Secretary at the India House, in order that the Court of Directors might be made aware of the fact, that "almost a mania prevails at present in America with respect to silk in the expectation of producing a better and cheaper kind than either India or China affords."

As the interests of the silk producers in India, Col. Sykes thinks, are likely to be affected by the new competition from America (setting aside the political question of enhancing the already serious dependancy of the manufacturing industry of England upon America for raw material) he addresses the Court of Directors of the India Company in order that they may take measures, should it be thought advisable so to do, for the immediate introduction into India of the mulberry which is now so much sought after by the Americans.

No sooner had publicity been given to the communication of Col. Sykes through the report of the Society's Proceedings, than a correspondent of the Society, struck with the value of the remarks, took steps the moment that the Secretary's account reached him, to put the Society in possession of some plants, and to the active exertions of Mr. Balestier, the American Consul at Singapore, is the Agricultural and Horticultural Society of India indebted for the only Morus Multicaulis plants that have yet, to the knowledge of the Society, reached the Province of Bengal.

The young trees are now at the nursery of the Society and thriving well, so that it is hoped that a short period longer will only be required before giving dissemination to them.

Work done—Measures projected for causing the introduction into India of plants of commercial value.

The subject which next claims attention is the progress made in the great work of improvement relative to the introduction into India of such plants as, from their commercial value, are likely to increase the wealth of the country and the interchange between its own and other countries of indigenous varieties.

In the month of June, 1839, a despatch was placed at the disposal of the Society by the Supreme Government intimating that it was the intention of the Home Authorities to transmit to India, seeds and plants "for the purpose of carrying on experiments for naturalizing in India useful and desirable plants indigenous in other countries," and to give assistance to an undertaking so laudable, the Society, unsolicited, proffered its aid and formed a committee, who by means of circulars sought to gather from distant local residents, all the practical information they could on the existing vegetable productions of the country, as well as an opinion of such plants as might be deemed worthy of introduction into their neighbourhood. At the last July Meeting, the committee made its second and final report, and stated that in accordance with the wishes of the Society, it had caused an extensive distribution of the circular, inviting information, to be made not only throughout the Presidencies of Bengal and Agra but to those of Bombay and Madras, and that it was its pleasing duty to announce the receipt of materials of an extensive and valuable kind, those obtained through the influence of Sir James Carnac, the Governor of Bombay, particularly so.

A recommendation was then offered to the effect that these papers should be made over to Government to be disposed of as might seem fit—remarking at the same time that as the Court of Directors in a public despatch under date the 24th July, 1839, a copy of which the Society was also duly favored with from the Supreme Government, had desired that the Governor General would cause to be printed and published, from time to time, such information as might be calculated either to extend the knowledge of the productions of India, to increase their amount, improve their quality, or give a stimulus to the demand for them, all which the Court also purposed itself doing in England, that these papers in the estimation of the Committee would form a fitting commencement to such labour; and desired therefore that they should be recommended to the notice of the Right Hon'ble the Governor General as being worthy of being digested and arranged for the press. The recommendation of the Committee was agreed to, and at the suggestion of the Hon'ble the President it was resolved, that, if on consideration the Government should sanction the expense which the superintendence of the MSS. would entail, and agree to their being printed, the Society should ask to have the control and management of publication confided to it.

The Government reply to the application was received on the 22d of July and was as follows—"His Lordship the Right Hon'ble the Governor General in Council, desires to express his thanks to the Society for the communication of the papers, which, though embracing a less wide range than might be desired, are in his estimation most valuable, and in some instances do very great credit to their writers from the well-directed zeal and spirit of observation which his Lordship considers that they display." Sanction is readily accorded to the publication of the whole. And these, the Secretary is happy to remark, are now in the Printer's hands in a great state of forwardness and will, it is hoped, be fairly before the public in the course of a very few weeks.

A few seeds have only as yet, however, been received by the Society, and whether the Court has taken steps to carry out their intention of sending plants, the Society is in ignorance.

Work done—Opening of correspondence with England.

During the past year the Society has not failed to appreciate the advantage of establishing in England, a free communication with the influential bodies connected with the interests of India. For this purpose a correspondence has been opened with the East India and China Association, from which useful and powerful body the warmest expressions of co-operation have been repeatedly received, while to the Chambers of Commerce at Manchester, Liverpool, and Glasgow the monthly publication of the Society has been regularly forwarded and been made extensive use of by the provincial press of these towns respectively in giving publicity to the particulars of the Society's proceedings.

This constant supply, or, flowing in as it were, of fresh dependable periodical knowledge to the great marts of England bearing on the productive resources of the vast, but as it has been properly styled by the present Governor General of India, "poor" country of British Asia, cannot but be the means of forcing attention when otherwise the subject might have been overlooked and neglected. Thus the Society hopes that its labours will indirectly become the medium of familiarising, much more than the circumstances of India have hitherto done, the minds of a large influential class of persons in the mother-country, with the natural riches of this, at present, rude and impoverished land, and contribute perhaps to the investment of European skill and capital to the evident eventual enrichment of both the state and the people.

Work done Encouragement of Branch Societies.

Encouragement continues to be given and held out to the spread of Branch Societies, and it is hoped that the friends of Horticultural and Agricultural improvement in India who have hitherto come forward so generously to assist in the good work will do their best to stimulate their neighbours to a like course. The reports which have been received from Secundra, Azimghur, Akyab, Berhampore, Saugor, Chittagong, Cuttack, Hooghly, and Allahabad, indicate how useful such institutions are in giving efficacy to the efforts of the Parent Society by bringing the seeds of knowledge home to the doors of the peasantry,—enriching them in the manner they most need,—and teaching them by the weight of influence to look up to and respect a fellowship that thus will take the trouble to make it apparent to them that their wants and comforts are watched over and protected.

Work done Promotion of the Tea culture in Assam.

On the subject of that great and novel article of British Indian commerce, the Assam tea, the Society has much to offer. The report of last year bore testimony to the vast wealth in the article of tea which the Province of Assam might be considered to have in store, and the early proceedings of this year bear on the face of them, from the pen of the able Commissioner of the Province himself, the gratifying announcement that the Muttock country—the garden of Assam—had just fallen into the hands of the English, *that he can give land for nothing to any extent*, that not only tea but caoutchouc, silk, sugar, and cotton are abundant there, while the lands are well adapted to the growth of cereal grains. By means of the Missionaries, the Military, and the superintendents and assistants of the Assam Tea Company, seeds, it is said, might be distributed all over the country with facility. One hundred and twenty boxes of black and seventy of green tea had been manufactured by the Government agent, and "were the Government establishments transferred at once to the Assam Tea Company (the Commissioner adds) this quantity during the next season could be increased an hundred-fold."

In August the Society, understanding that information had been received by the Supreme Government from England relative to the sale of ninety chests shipped by its orders to the Court of Directors, applied for the particulars, and was politely favoured in return with extracts from the Hon'ble Court's despatch, as well as with the various testimonials of estimate from commercial houses in London of the intrinsic excellencies and value of the article. These long and conclusive documents will be found in full in the November number of the Proceedings of the Society.

Work done—Flax, culture in India.

The Flax culture in Hindustan has engaged much of the attention of the Society during the past year. The more the capability of the country to produce vegetable fibre is inquired into the more apparent becomes the conviction that the stock is unbounded and as excellent as it is plentiful.

It will doubtless be in the recollection of the Society that an Experimental Flax Company, which had become established in London about the middle of the past year, submitted, through its trustees in Calcutta, a series of highly instructive papers setting forth the extent of the exertions of the body to introduce a superior order of flax culture in the Province of Bengal, and asking the aid of the Agricultural and Horticultural Society in supporting its application to the Supreme Government for a bounty or debenture in consideration of having sent out two Belgium Farmers with a large quantity of seed, and undertaken the object as an experiment for the purpose of adding to the revenue, commerce, and prosperity of the British Indian possessions.

At the same time an offer was made by Dwarkanath Tagore, Esq. to grant a house and premises in the suburbs of Calcutta, free of rent, to set the experiment a-going.

The papers he presented on the occasion will all be found printed in the May and June numbers of Proceedings. The subject to which they referred was deemed to require reference to the standing Flax Committee. At the following Meeting of their Society the Committee report that the liberal and handsome offer of Dwarkanath Tagore, Esq. is deserving of the most favorable consideration; for it is impossible in its opinion to calculate the extent of benefit which may accrue to the commerce of the country by a successful flax culture in India. The recommendation of the

Committee was, that a premium of 10,000 rupees should be given on the production of ten tons of good merchantable flax, which, after deducting all expenses, should be found to yield a fair profit in the English market so as to compete successfully with the produce of other countries. This was agreed to by the Meeting and a letter inclosing this resolution was sent on to the Supreme Government.

At the meeting in August the announcement of the unfavorable reception by the Government of the recommendation of the Society was made. The Governor General intimates that after considering the subject with all the attention due to the wishes and suggestions of the Society, he feels himself unable to submit a proposition to the Government of India with a view to obtaining authority for the offer of the premium. His Lordship further remarks, that he cannot but regard with interest the public-spirited proceedings of the gentlemen who have come forward to promote the improvement of the cultivation of flax in India, but it is only in very rare instances, and with the view of exciting a direct and general competition that he would attempt by encouragement on bounty to influence the course of commercial and agricultural enterprise, and that he does not feel that the case before him is one which would justify the special interference of the Government. This reply was duly transmitted to the trustees with whom the matter now rests.

Work done—Representation on the hardship of discriminating duties on tobacco and rum.

The oppressive exaction of a discriminating duty on East Indian Rum and Tobacco imported into the mother-country has been a subject of deep consideration by the Society during the past year.

At the Meeting in September, the subject for a second time underwent discussion, and a motion grounded on the one of the previous year was submitted and agreed to, wherein the Society desires to reiterate its sentiments on the impolicy of not encouraging the production of sugar in India by the equalization of the rum duty, and the growth of tobacco by a similar course.

The Government of India in its reply to this appeal has emphatically denounced the unfairness of the existing arrangement, and has declared that the representation which the Society has made shall be forwarded to the Hon'ble the Court of Directors, with the earnest expression of the concurrence of the Governor

General in Council in the justice of the petition of the Agricultural and Horticultural interests of the country, for the removal of the remaining inequalities in the customs of Great Britain affecting the sugar and tobacco cultivation of India.

Nursery of the Society. The Nursery of the Society has been duly attended to during the year, and so great has been the demand for sugar-canes that it is with great regret that the announcement has to be made of many applicants having been sent away without the means of supplying their wants. Measures have been taken to avoid this disappointment in future through the considerate attention of Dr. Wallich, who has suggested the extension of the cultivation by apportioning more ground, and has spared no efforts to render the utmost possible space available for the cane culture.

In the department of rewards the Society has to report the adjudication at the exhibition of cattle, held on the 1st February 1840, of the following medals and money prizes:—

To Chas. Huffnagle, Esq., for the best produce of imported cattle, a gold medal, and two hundred and fifty rupees.

To Messrs. Cook and Co., for the second best produce of imported cattle, a silver medal, and two hundred rupees.

To Chas. Huffnagle, Esq., for the best cow calf of any denomination, calved in 1839, a silver medal.

To W. F. Gibbon, Esq., for the best imported woolled Merino Ram of the year 1839, not less than two years old, a gold medal and two hundred rupees.

To Wm. Storm, Esq., for the second best imported woolled Merino Ram of the year 1839, not less than two years old, a silver medal, and one hundred and fifty rupees.

To W. F. Gibbon, Esq., for the best thorough-bred Merino Ram lamb, lambed in 1839, a gold medal.

To W. F. Gibbon, Esq., for the best thorough-bred Merino Ewe lamb, lambed in 1839, a silver medal.

To W. F. Gibbon, Esq., for the best lamb, either Ram or Ewe, cross of a Merino Ram and an indigenous Ewe, lambed in 1839, a small silver medal.

Horticultural department. In the Horticultural department the Society has not failed to promote every measure calculated to create an interest for this valuable branch of public economy. Seeds of all the culinary vegetables continue to be imported from England and the Cape of Good Hope, and every effort has been made to prevent for the future the disappointment the past year's investment from England has occasioned.

Conclusion. In conclusion the Society hopes, that by thus keeping steadily in view the manifold great objects which it is its purpose to forward, and actively encouraging the Agricultural and Horticultural interests of the vast territories of British Asia, all of which legitimately fall under its consideration, the work of improvement and the cause of civilization will be advanced, while the usefulness of the institution will be continued to be acknowledged and supported.

HENRY H. SPRY, M. D.
Secretary.

COLLECTOR'S REPORT

For the year 1840.

Preliminary.

In accordance with established usage, I have the pleasure to submit a statement of the financial operations of the Agricultural and Horticultural Society of India during the past twelve months, and take the opportunity of adding a few remarks.

Subscriptions realized from Members.

The first item for notice is that of subscriptions realized from Members, and I am happy to have it in my power to shew an increase compared with the preceding year of Rs. 1,809 13 6;—thus,

Amount collected by subscriptions in 1840,..	13,932	0	0
Amount collected by subscriptions in 1839,..	12,122	2	6
Increased collection in 1840, Rs..	1,809	13	6

Society's Transactions and Proceedings.

Under the head of Disbursements, the Society's Transactions and Proceedings occupy a prominent place. The charge is a heavy one,—but in it is included the cost for the publication of the sixth, and the *reprint* of the third volume of the Transactions;—this reprint has made the Transactions in the Society's Library complete, and quite sufficient for the probable requirements of Members for future years. It must be further observed that the great accession of Members during the past two years has caused a corresponding addition to the number of the monthly Proceedings of the Society, while the many long and valuable communications received during that time, have considerably increased the bulk of each brochure, and necessarily added much to the expenditure.

Medals awarded by the Society.

The expense incurred for Medals awarded by the Society has been considerable, but on this item, coming as it does so legitimately within the scope of the Society's intentions, it is unnecessary to dwell; —it may be a gratification to Members to see that the wishes of the Society in this respect have been so amply fulfilled.

Non-redemption of Government Securities from the Bank of Bengal.

In the last Annual Report, it was mentioned that the Government Securities for 4,500 Rs. withdrawn from the Society's Vested Fund and lodged in the Bank of Bengal in satisfaction of a loan of 4,000 Rs. might perhaps be redeemed in the course of the year 1840;—owing however to the many heavy charges which the Society has been called upon to meet during that period, this expectation has not been realized. But since the disbursements for the current year are not likely to be so considerable as those of the last, and as, with reference to the great accession of Members, there is every probability of an addition to the receipts,—there are more grounds for expressing the hope that a return of the Government Notes to the fixed Assets of the Society may be effected during the year 1841.

Vote of Ten Thousand Rupees to the Metcalfe Hall Fund.

By a resolution of the Society passed at a General Meeting held on the 10th June last, the sum of Ten Thousand Rupees was withdrawn from its Fixed Assets and voted as its Donation to the Metcalfe Hall Fund. The objects contemplated by this arrangement, and the advantages that will result to the Agricultural and Horticultural Society by the erection of this edifice, have been fully enlarged on in the Annual Report, and the circumstance is merely noticed in this place as explanatory of the reduction now exhibited in the amount invested in Government Securities.

Conclusion. In concluding this brief report, it is gratifying to add that the Schedule of arrears for subscription exhibits a more favourable appearance than that of last year, and there is every probability that these may be speedily realized and a further addition thereby made to the resources of the Agricultural and Horticultural Society of India.

A. H. BLECHYNDEN,
Collector.

January 1*st*, 1841.

Statement of Receipts and Disbursements from 1*st January to* 31*st December*, 1840.

RECEIPTS.

From Members, Subscriptions collected during the year,				13,932	0	0
„ Government, Annual Donation,	1,045	0	0			
„ Ditto, Monthly allowance for 12 months, at 135 13 6 per month,............................ ...	1,630	2	0	2,675	2	0
, Proceeds of Surplus Cape Vegetable seeds sold,................. .	198	0	0			
, Ditto of English ditto ditto,......	274	0	0			
, Ditto of American ditto ditto,...	10	0	0			
, Ditto of Nepaul ditto ditto,......	5	0	0			
, Ditto of sugar-cane delivered from the Society's Nursery Garden from October, 1839, to November, 1840,...	876	8	9			
The Secretary, being the balance of amount awarded for prizes to Mallees at an exhibition of Vegetables held on 9th January, 1840,...	86	0	0			

From Messrs. Mackillop, Stewart & Co. amount refunded for Flax seed purchased by the Society and which proved bad, ...				41	8	9			
„ Proceeds of old seed boxes and casks, ...				52	0	0			
							1,543	1	6
„ Ditto of Copies of volumes of the Transactions of the Society,				263	12	9			
„ Ditto of an extra Copy of "Porter's Tropical Agriculturist," from the Society's Library, ...				11	0	0			
							274	12	9
„ The Secretary, being the balance of amount drawn from the Bank for the purchase of Mohurs for Gold Medals, ...							11	0	0
„ Proceeds of the following Government Promissory Notes withdrawn from the Society's Vested Fund to meet the amount voted towards the Metcalfe Hall Fund, viz.—									
14 Notes of the 4 per Cent. Loan, amounting to Sa. Rs. 8,500 or	9,066	10	8						
3 Ditto of ditto,	1,500	0	0						
17 amounting to	10,566	10	8						
Add interest due on these notes at the time of sale,.. ..	144	13	9						
				10,711	8	5			
Deduct Discount, &c...				353	0	5			
							10,358	8	0
Accruings of Interest on the Society's Fixed Assets, lodged in the Government Savings' Bank,...							326	14	0
Total Receipts, Co.'s Rs.							29,121	6	3

Balance in the Bank of Bengal, on 31st Dec. 1839, ...	483	8				
Balance in the Savings' Bank, on ditto, ...	65	4	0			
				548	12	1
Grand Total, Rupees,				29,670	2	4

DISBURSEMENTS.

Foreign Vegetable and Flower Seeds.						
By C. N. Villet, for Cape Seeds, ..	1,000	0	0			
„ Noble and Sons, for English Seeds,	1,115	2	6			
				2,115	2	6
Flax Seed						
„ Messrs. Mackillop, Stewart and Co. for English Flax Seed, ...				47	8	9
Country Cotton Seed.						
„ Mr. Thomas Dearman for Dacca Cotton Seed supplied the Society for Dr. Gibson at Dapooree, ...				6	0	0
Society's Nursery Garden.						
„ Dr. Wallich, for expenses incurred on account of the Society's Garden, from the 1st Dec. 1839 to 30th November, 1840, ...				1,690	4	5
English Fruit Trees.						
„ Noble and Sons, for a supply of English Fruit Trees, ...				301	1	2
English Grain Seeds.						
„ Noble and Sons, for a consignment of English Grain Seeds, ...				568	4	6
Society's Transactions, Proceedings, &c.						
„ Baptist Mission Press, for a reprint of vol. 3 of the Transactions of the Society (300 copies,)	710	10	0			
„ Ditto, for printing and binding 500 copies of vol. 6 of Transactions, ...	1,310	0	0			

By Baptist Mission Press, for printing Monthly proceedings, from January to November, 1839.	685	2	0			
,, Serampore Press, for binding 200 copies of vol. 2 of the Transactions, (Bengali edition,)	99	0	0			
,, Mr. Tassin, for lithographing 1,000 copies of a map descriptive of the Tea Localities in Assam, ...	144	0	0			
,, Bishop's College Press, for printing 500 copies of a list of the members of the Society on 1st Jan. 1840, ...	77	8	0			
,, Mr. Thomas Black, for lithographing plates for vol. 7, ...	55	0	0			
				3,081		
Printing Account.						
,, Sundry Parties, for printing Receipts for contributions, tickets, &c. &c.	77	8	0			
Library.						
,, Books purchased during the year for the Society's Library, ..	233	4	0			
Stationary.						
,, Stationary for office books and for the use of the office, ...	114	2	0			
,, Brown Paper for packing seeds, .	210	12	5			
				324	14	5
Advertisements.						
Advertising in the public prints from 1st November, 1839, to 30th November, 1840, Notice of Meetings of the Society, Distribution of Seeds, Sugar-canes, &c., offers of premia for certain objects, &c. &c., ...	560	12	0			

Establishment.			
By Amount for Establishment from 1st Dec. 1839 to the 30th November, 1840, ...		6,524 10 0	
Pecuniary Rewards.			
„ Prizes to Mallees, awarded at an exhibition of vegetables held on 9th January, 1840, ...		200 0 0	
„ The Hooghly Branch Society, balance due for prizes awarded at their Horticultural exhibition on 1st February, 1840, ...		14 0 0	
„ W. F. Gibbon, Esq. for the best woolled Merino Ram exhibited at the Cattle Show held on the 1st February, 1839, ...		200 0 0	
„ Ditto, for the second best ditto, exhibited at ditto, ...		150 0 0	
			564 0 0
Medals.			
„ The Calcutta Mint for gold and silver medals supplied the Society, ...		405 2 0	
„ Amount paid for the purchase of twenty gold mohurs, sent to the Mint for the manufacture of three gold medals,	309 0 0		
„ Amount overdrawn from the Bank and recredited, ...	11 0 0		
		320 0 0	
„ Amount forwarded to the Mint for the manufacture of silver medals,		324 0 0	
„ Gourmohun Roy for making morocco cases for medals,...		16 0 0	
„ Pittar, Lattey and Co. for one ditto for ditto, ...		4 0 0	
			1,069 2 0

Freight.		
By Freight on boxes of English and Cape seeds, on cases for fruit trees, &c....		430 14 8
INTEREST.		
„ Bank of Bengal, amount of interest on a loan of 4,000 Rs. from 7th Dec. 1839, to 23rd Oct. 1840, ...		175 8 11
Metcalfe Hall.		
„ Amount voted by the Society from its Vested Fund, as its contribution towards the fund for the erection of the Metcalfe Hall,..		10,000 0 0
Sundries.		
„ Postage and petty expenses during the year, ...	225 0 0	
„ Amount paid for extra writers and packermen for sub-dividing consignments of English and Cape seeds,...	76 14 9	
„ Custom House Duty on brown packing paper, ...	7 6 9	
		309 5 6
Total Disbursements,		28,079 8 10
Balance in the Bank of Bengal on 31st December, 1840, ...	1,548 7 6	
Balance in the Savings' Bank on ditto,	42 2 0	
		1,590 9 6
Grand Total, Rupees,		29,670 2 4

MEMORANDUM.

Dr. | Cr.

Receipts.						
To amount of Disbursements during the year 1840, as per Statement, ...				28,079	8	10
To Balance in hand on the 31st December, 1840, in the Bank of Bengal, ..	1,548	7	6			
To ditto on ditto, in the Savings' Bank,........	42	2	0			
				1,590	9	6
Total, Rs.				29,670	2	4

Disbursements.						
By amount of Receipts, during the year 1840, as per Statement,...........				29,121	6	3
By Balance in hand on the 31st December, 1839, in the Bank of Bengal, ..	483	8	1			
By ditto on ditto, in the Savings' Bank,........	65	4	0			
				548	12	1
Total, Rs.				29,670	2	4

DEPENDENCIES.

Amount invested in Govt. Securities, lodged in the Govt. Agency Office, Sa. Rs. 5,000 or Co.'s Rs.	5,333	5	4
Amount lodged in the Bank of Bengal in satisfaction of a Loan of Four Thousand Rupees,.........	4,500	0	0

REGULATIONS

For the Agricultural and Horticultural Society of India, sanctioned at a General Meeting, held at the Town Hall, Calcutta, March 14th, 1838.

Art. 1.—The promotion and improvement of the Agriculture and Horticulture of India, constitute the objects of the Society.

Art. 2.—Gentlemen of every nation shall be eligible as Members of the Society.

Art. 3.—Candidates for admission as Ordinary Members shall be proposed by two Members, at a General Meeting, and ballotted for at the succeeding, when a majority of votes will determine the election.

Art. 4.—Honorary Members shall be persons eminent for their knowledge of, or encouragement given to Agriculture or Horticulture, or for services rendered to the Society. They are to be proposed and ballotted for as Ordinary Members, but two-thirds of the votes are to determine their election. Ordinary Members who may peculiarly distinguish themselves in the advancement of the objects of the Society shall, on their finally quitting India, be eligible as Honorary Members, but must be ballotted for as above.

Art. 5.—Ordinary Members are to pay an admission fee of 8 Rs. and the same sum quarterly, in advance, so long as they continue resident in India. It shall be optional for any Member to compound for the quarterly contributions by the payment of 400 Rs. to the funds of the Society.

Art. 6.—Members, whose absence from India beyond the Cape is merely temporary, shall continue to be borne on the list of Members, but shall be exempt from the payment of subscriptions, until their return to the country.

Art. 7.—Resident Members, allowing four quarterly bills to run into a fifth unpaid, the same having been duly demanded, shall cease to be Members of the Society and their names shall be erased from its list. Ex-Members thus situated, shall not be eligible to re-election, except upon payment of all arrears; and it shall be the duty of the Secretary to bring this article to the notice of the party proposing such Ex-Member, and prevent the name from being brought forward, until all arrears of subscription are discharged.

Art. 8.—The Anniversary Meeting shall be held in January when the election of Office-bearers shall take place, consisting of,

1 President.
4 Vice-Presidents, two of whom shall always be Natives.
2 Secretaries, one European, and the other Native.
1 Collector.

Art. 9.—A General Committee shall also be elected annually, consisting of the Office-bearers, and six Members. There shall besides be select Standing Committees, for the more ready despatch of business, as shall be arranged from time to time, at the General Monthly Meetings.

Art. 10.—General Meetings shall be held at the Society's apartment in the Town-Hall on the second Wednesday of every month throughout the year.

Art. 11.—Special Meetings may be convened at any time, on a requisition to that effect, signed by at least six Members.

Art. 12.—The Bank of Bengal shall be the Treasurers of the Society, and when the surplus in their hands may amount to 1,000 Rs. it shall be invested in Company's securities, on behalf of the Society, in the joint name or names of the Secretaries and Collector for the time.

Art. 13.—Such Communications made to the Society as may be deemed of public utility by the Committee of Papers, shall be published, whenever a sufficient number have been collected to form part at least of a volume.

Art. 14.—Notice of motion shall be given on all questions relating to Finance, at a General Meeting, preceding that on which the subject is to be disposed of, in order that Members who take an interest in the question, may have an opportunity of signifying their assent or objection either verbally or in writing; all such notices shall be recorded in the Journals along with the Proceedings, and hung up for inspection in the Society's apartments.

Art. 15.—Motions, of which previous notice has been given, shall take precedence of all others.

Art. 16.—The same rule and precedence (see Nos. 14 and 15) shall be applicable to all motions involving points of importance, and no resolutions shall be confirmed at the time of being brought forward, unless the case be urgent.

Art. 17.—Members (non-resident) applying for seeds shall distinctly state to whose care such seeds are to be delivered in Calcutta. The Society cannot undertake to despatch them.

Art. 18.—Members shall be entitled to a share of all seeds or plants purchased by, or presented to, the Society.

Art. 19.—Members shall be entitled to a copy of the Society's Transactions, published subsequently to their election. For all previously published volumes, they shall pay the cost charges. Art. 17 applies equally to the transmission of these volumes.

Art. 20.—Members of Branch Societies, and who are also Members of this Society, shall not be exempt from contributing to this Society, but they shall be entitled to a double share of all seeds distributable.

Art. 21.—Authors, whose papers may be published in the Transactions of the Society shall be entitled to 20 copies for their own private use; any more required, must be paid for at prime cost.

AGRICULTURAL AND HORTICULTURAL SOCIETY OF INDIA.

EXHIBITION OF PRIZES.

SCHEDULE OF PRIZES

FOR CATTLE OF VARIOUS KINDS TO BE EXHIBITED AT THE ANNUAL SHOW ON THE 1ST OF FEBRUARY 1842, 43, & 44.

Imported Neat Cattle.

1st.—For the best *specially* Imported Devonshire, or Middle Horned Bull, landed during 1841,—not less than two years old,

A Premium of 500 Rs. and the Gold Medal.

2nd.—For the second best ditto, landed during 1841,—not less than two years old,

A Premium of 250 Rs. and the Silver Medal.

3rd.—For the best Imported Cow of any denomination,

The large Silver Medal.

PRODUCE.

1st.—For the best *Cross*, the produce of an Imported Bull or Cow with Native Stock,

The Gold Medal.

2nd.—For the best *Cross*, the produce of different varieties of the Cattle indigenous to this Country,

The Silver Medal.

3rd.—For the best *Bull* Calf of any denomination, calved in 1841,

The Gold Medal.

4th.—For the best *Cow* Calf of any denomination, calved in 1841,

The Silver Medal.

IMPORTED SHEEP.

1st.—For the best *specially* Imported Wooled Merino Ram, landed during 1840, not less than two years old,

The Gold Medal.

2nd.—For the best Imported Wooled Ram of any denomination, landed during 1841, not less than two years old,

The large Silver Medal.

3rd.—For the best pen of Merino Ewes (not less than six), imported in 1841,

The Silver Medal.

PRODUCE.

4th.—For the best Wooled *Cross* between an Imported Ram or Ewe and indigenous Stock,

The Gold Medal.

5th.—For the second best Wooled *Cross* between an Imported Ram or Ewe and indigenous Stock,

The large Silver Medal.

6th.—For the third best Wooled *Cross* between an Imported Ram or Ewe and indigenous Stock,

The small Silver Medal.

7th.—For the best thorough-bred Wooled Merino Ram Lamb, lambed in 1840,

The Gold Medal.

8th.—For the best thorough-bred Wooled Merino Ewe Lamb, lambed in 1840,

The Silver Medal.

ERI-SILK.

The *Agricultural* and *Horticultural Society, in conjunction with Captain Jenkins, the Governor General's* Agent in Assam, beg to call the attention of the public to the following notification :

1st.—To any person who may succeed in discovering an effectual and cheap solvent for the adhesive material which attaches to the Cocoons of the Eri-Silkworm,—so that the Silk can be made useful to commercial purposes ;—

The Society's Gold Medal and 200 Rupees.

2nd.—For the best and most economical mode of preparing Floss, and also the manufacturing of a fine thread from the Floss of the Eri-Cocoons ;—

The Society's Gold Medal and 200 Rupees.

3rd.—For the best and most economical method of bleaching Cloth manufactured from the Eri-Cocoon, so as to take permanent and fugitive dyes well ;—

The Society's Gold Medal and 200 Rupees.

CONDITIONS.

No claimant to any of the above rewards shall be entitled to the prizes, till they have furnished the Silk Committee with the fullest particulars of their discovery ; and the Society further reserves to itself, the right of withholding the award of prizes till the experiments of the claimants have been tested on an efficient scale.

TREE CULTIVATION IN THE UPPER PROVINCES.

To the owner of the largest new Plantation of Trees in the Agra Presidency, in the year 1842,

The Gold Tucker Medal.

CONTENTS.

Page

ART. 1.—Report of the Special Committee on the best means of improving the Cotton Culture, throughout Hindustan, ...

2.—Despatch from the Home Government relative to the cultivation of Hemp, and the publication of useful papers bearing on the Improvement of the Commercial Resources of the country, ... 15

3.—The great Natural Resources of the newly acquired Province of Muttock in Upper Assam:—the progress of the Tea cultivation. By Capt. Jenkins, Agent of the Governor General in Assam,........ 27

4.—Report on some samples of Acclimated Upland Georgian Cotton grown at Hansi, of Indigenous Cotton from Jalown, of Acclimated Peruvian or Pernambuco Cotton; also samples of Cotton grown from Foreign seed at Secundra and Gorruckpore, and on two samples from Arracan, ... 30

5.—Measures for promoting the Flax Culture in Hindustan. Papers submitted by the Experimental Flax Company and Members of the Society. Report thereon and favorable representation made to the Government of India accordingly. 36

6.—Capability of Amherst for the production of Sugar. By Edward O'Riley, Esq., ... 54

7.—Dried Plantains, as a useful Confection Communicated by N. Wallich, Esq. M. D., F. R. S. 58

8.—On the mode of Growing and Manufacturing of the celebrated Chunderic Cotton and Mahmoodie Cotton Cloth; with a sketch of the Geological Features of the Country. By R. H. Irvine, Esq. M. D., Residency Surgeon, Gwalior, ... 64

Page

ART. 9.—On the value of Kyan's Patent as a preservative to Bamboo and other Garden Fences in India. By J. Drummond, Esq. Surgeon to the Right Honorable the Governor General, ... 68

10.—Report on samples of Assam Tea, presented to the Society, ... 69

11.—On the flourishing state of Arracan. By Captain A. Bogle, Commissioner of Arracan, ... 71

12.—Memorandum on the Cultivation and Manufacture of Hemp, as practised in the Hills in the North of India. By Major Swetenham, ... 74

13.—*On Manilla Hemp and its superiority as Cordage in India over the Hemp Rope of Europe.* By the Right Honorable Stewart Mackenzie, Governor of Ceylon, with particulars regarding the Botanical History of the plant by Dr. Wallich, ... 76

14.—Otaheite Cane Culture in the District of Tipperah. Communicated by E. Foaker, Esq. Civil Surgeon,... 89

15.—On the Corn and Pasture Grasses of India. By Professor Royle, F. R. S. 91

16.—Successful Introduction of Baraset Rice into the District of Purneah. Communicated by George Pratt, Esq., ... 107

17.—Capabilities of Central India. The Goands of Omurkuntuk. By G. G. Spilsbury, Esq. Surgeon, Political Agency, Saugor and Nerbudda Territories, ... 109

18.—Notes of a Temporary Residence on the Table-land of Omurkuntuk, Central India May 31st, 1841. By D. F. McLeod, Esq. Political Officer at Jubbulpore, ... 144

19.—Report of Special Committee of Statistics of Agriculture. Market Prices of Staple Articles in various Localities, ... 146

20.—On the existing State of Tree and Forest Cultivation in the Sugar Districts of Azimghur, and measures for overcoming the scarcity. By Henry Carre Tucker, Esq. 205

Page

ART. 21.—Notice of the Hemp Cultivation in the Nepaul State, with specimens. By B. H. Hodgson, Esq. British Resident at the Court of Nepaul, ... 212

22.—Public Spirit among the Hindoo Race as indicated in the flourishing condition of the Jubbulpore District in former times, with a sketch of its present state—also on the great importance of attending to Tree Cultivation and Suggestions for extending it. By Major Sleeman, late in charge of the Jubbulpore District. 214

23.—On the advantages attending the Maize and Cotton Cultivation in the Delhi Territory. By G. H. Smith, Esq., Collector of Government Customs at Delhi... 225

24.—On the great Productive Prospects of the Arracan Province,—Prospects to Settlers at Cheduba Island. Communicated by Captain Bogle Commissioner of Arracan, ... 246

25.—On the mode of cultivating Tobacco at Sandoway. Communicated by Lieutenant Thomas Latter, Adjutant of the Arracan Local Battalion, ... 248

26.—The Productions and Floriculture of the Valley of Herat. By Major E. D'Arcy Todd, Political Agent at Herat, ... 251

27.—Public measures for encouraging the promotion of the Agricultural Resources of India, ... 253

28.—Notes on the Sugar Cultivation and Soils of Barbadoes; obtained through Lord John Russell on the application of John Stikeman, Esq. Presented by Henry Piddington, Esq. 256

29.—Report on Hemp Cultivation, &c. in British Gurhwal, by Captain H. Huddleston, Senior Assistant to the Commissioner of Gurhwal. Submitted through the Commissioner of Kumaon on the 14th July, 1840, ... 260

30.—Official Information connected with the Growth and Sales in London of Assam Tea, ... 282

Page

Art. 31.—Experiments made in England under the supervision of the Honorable the Court of Directors on a new method of ginning East India Cottons. Declaration of approval by the High Authorities in England of the operations of the Agricultural and Horticultural Society of India, ... 301

32.—On the Potatoe and it's Culture in India. By Mr. G. T. F. Speed, ... 307

33.—Notes on the benefit to be derived by Establishing Experimental Farms for the introduction of new and improvement of known Products, in various parts of India. By G. H. Smith, Esq. Collector of Government Customs at Delhi, ... 314

34.—A series of Observations, on the Climate and Horticulture of Candahar, from January to August, 1840. By Colonel L. R. Stacy, ... 327

PROCEEDINGS.

Proceedings of the Society during the year 1840, ... 333

Report of the Society for the year 1840, ... 475

Regulations for the Agricultural and Horticultural Society of India, ... 503

Schedule of Prizes offered by the Society, ... 507

TRANSACTIONS

OF THE

AGRICULTURAL & HORTICULTURAL SOCIETY OF INDIA.

VOL. VIII.

PRINTED AT THE BAPTIST MISSION PRESS, CIRCULAR ROAD.

1841.

THE Committee appointed by the Agricultural and Horticultural Society to direct the publication of the Papers read before them, takes this opportunity to inform the Public that the grounds of its choice are and will continue to be, the importance and singularity of subjects, or the advantageous manner of treating them, without pretending to answer for the facts or the propriety of the reasonings, contained in the several papers so published, which must still rest on the credit or judgment of their respective authors.